ARMY

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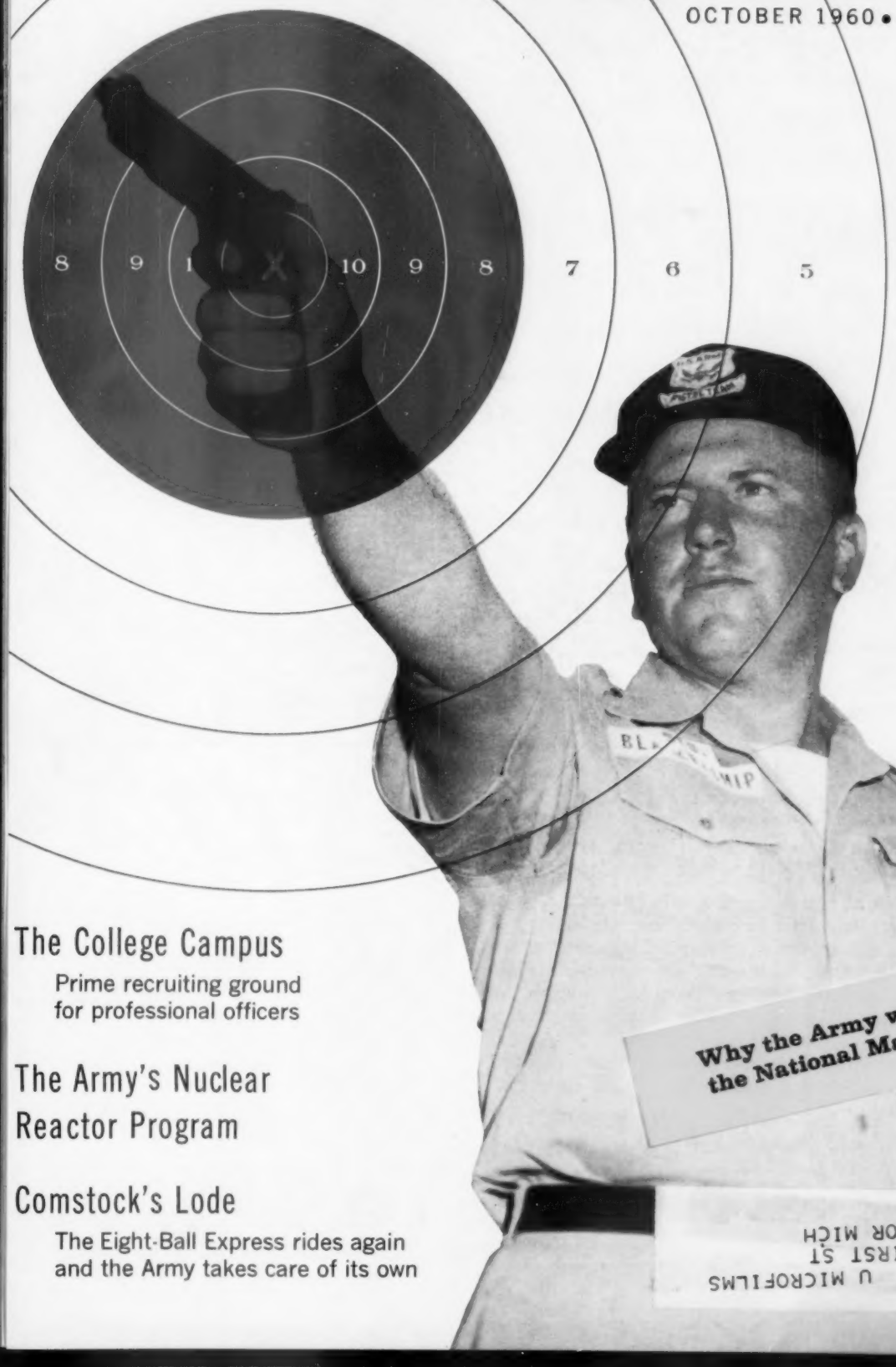

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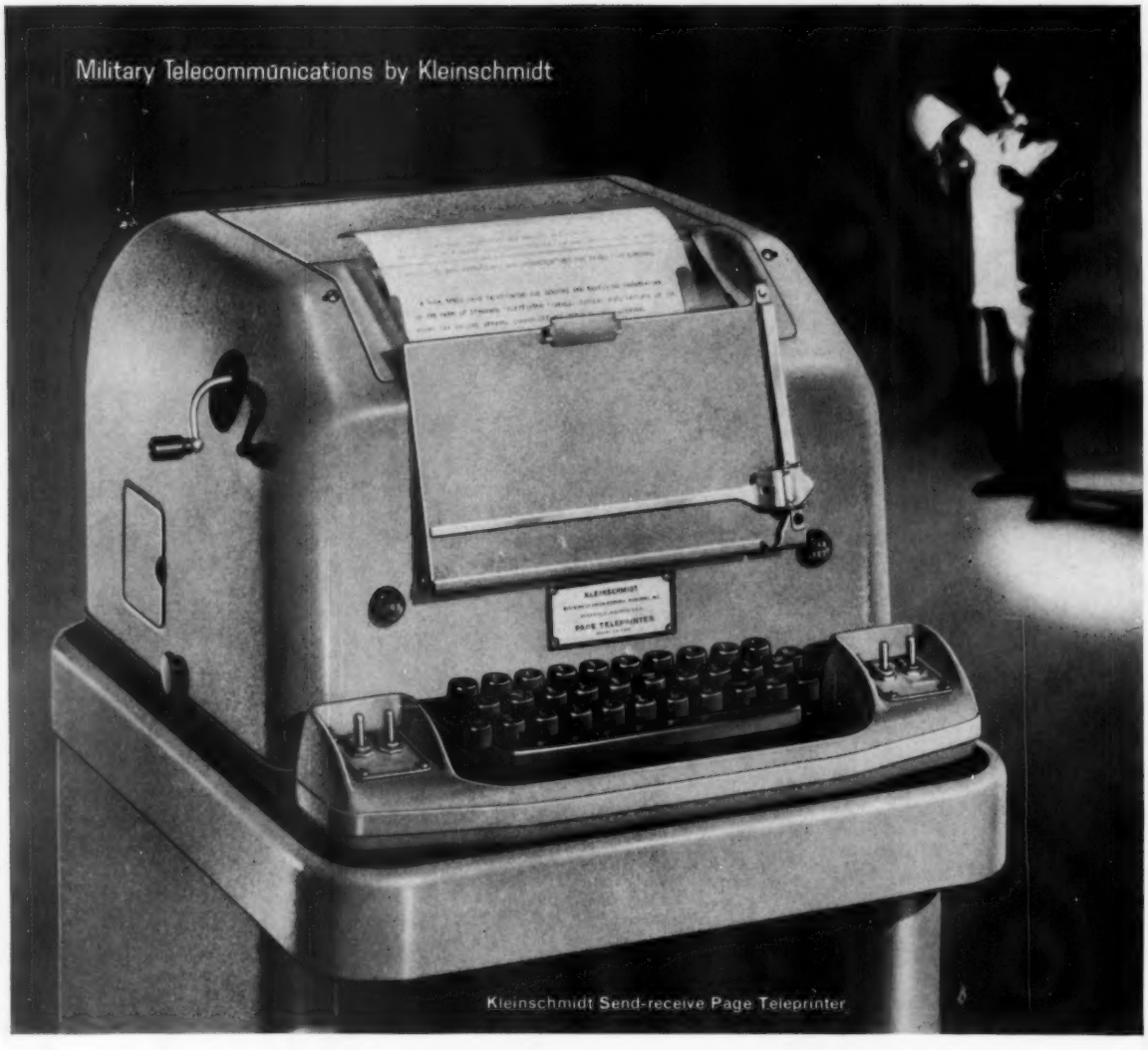

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ARMY

A PROFESSIONAL PUBLICATION DEVOTED TO THE ADVANCEMENT OF THE MILITARY ARTS AND SCIENCES AND REPRESENTING THE INTERESTS OF THE ENTIRE U. S. ARMY

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SFC William B. Blankenship demonstrates the aim that set a new record of 2636-128X when he won the NRA National Individual Pistol crown for the Army at Camp Perry.

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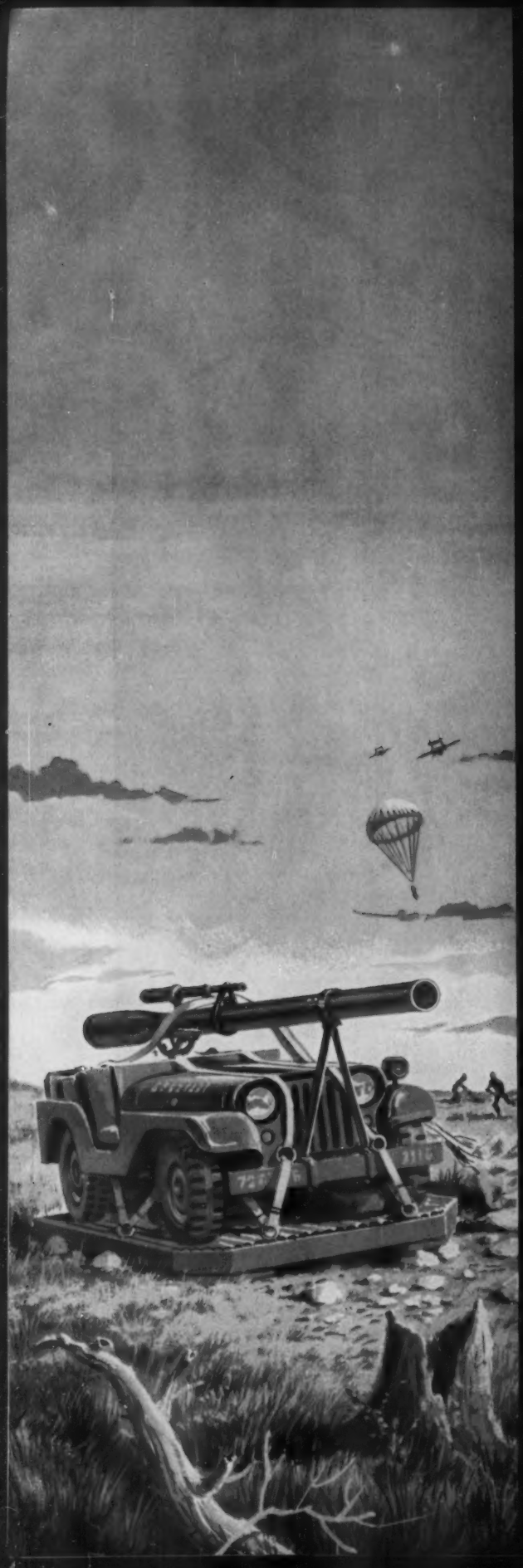

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ARMY letters

AND BACKED BY A FORMER ENEMY

● Looks like the British Army is back fighting at Yorktown. Note picture on page 55 of your July issue.

MAJ. GERALD A. MCGRATH
Fort Ord, Calif.

PAPERWORK REDUCTION

● I am a reservist, and while the administrative burdens I've borne are different from those mentioned by Captain Meyer in the July issue, they would indeed be impracticable in combat.

During the years I have commanded a battery I have searched for a rationale upon which to force consideration for a more reasonable administrative load in the company.

Now comes Captain Meyer with his article "Paperwork Pushers" which starts out, "If our Army is to be truly prepared for combat, then our daily handling of administration and logistics must be the same in peacetime as it would be in combat." What powerful logic is contained in this reasoning!

In my experience, staffs have been generally selfish, inconsiderate, and even incompetent. I doubt that they are now different and that they will willingly increase their workload.

However, Captain Meyer's article is clear, concise, and convincing. For the good of our Army, the effectiveness of its companies, batteries, and troops, I pray that the powers that be read Captain Meyer's article carefully and implement it thoughtfuly.

CAPT. ROBERT P. KINGSBURY
Cuyahoga Falls, Ohio

INFORMATION ON GENERAL MARSHALL

● I am interested in getting information, photographs, letters and papers relating to the career of General George C. Marshall for use in his authorized biography which I am now writing.

FORREST C. POGUE
George C. Marshall Research Center
Box 831, Lexington, Va.

FOR 12TH ARMY GROUP VETS

● Fifteen years after victory in Europe, members of the 12th Army Group staff (Eagle) will honor their chief, General of the Army Omar N. Bradley, at their annual reunion at the Army-Navy Town Club in Washington on 28 October.

Toastmaster will be the Hon. Gordon Gray, Special Assistant to the President.

COL. BERTRAM KALISCH
Brandywine, Md.

EFFECT OF THE MORAL FORCE

● Colonel Cawthon's article, "A Joust of Moral Forces" [July], is penetrating but, I feel, incomplete. It is impossible to write of conquering the enemy by dominating his mind and will without mentioning Colonel Ardant du Picq. Du Picq's adulation for the Napoleonic maxim, "In war the moral is to the material as three is to one," influenced military thought for decades after his death. While Colonel G. F. R. Henderson was writing, the Ecole de Guerre adopted Du Picq's concept of moral dominance as the prime cause of victory.

France's army became so enthralled with moral force that it failed to realize that the age of the Great Captains had passed. What resulted were the outrageous blunders of 1914-15.

LT. BRIAN J. BOSCH
Fort Ord, Calif.

INFORMATION ON GENERAL PERSHING

● I am working on a biography of General John J. Pershing, commander of the AEF in World War I. I would be interested in hearing from anyone who has letters, anecdotes, reminiscenses or other information about General Pershing.

DONALD SMYTHE, S.J.
Georgetown University
Washington 7, D. C.

HANDLING A MOB

● I thought that Brigadier Miers's "Riot in Singapore" in your July issue was a good follow-up to General Gray's "When We Fight a Small War."

Having had some experience in internal security in the Middle East, you may be interested in some observations of mine.

For instance, in one particular area the local police used the following procedure to break up a crowd. They would form up in several ranks across the street. Then the first rank would advance, charge and belabor the

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crowd with their long batons, then quickly turn and retreat as the second rank passed through them and hit the crowd. Then the crowd would be subjected to a continuous succession of charges and would soon become disorganized, whereas the police would be able to catch a brief respite between charges.

When things got out of control and the troops were called out, the internal security company would form up some distance behind a barbed-wire barricade they would throw across the street so as to be out of effective range of bottles and bricks. The order to load would be given and each soldier would extract one round from his pouch, hold it up at arm's length, then insert it into the chamber. This showed the mob that live ammunition was being used, and that each soldier had "one up the spout." In actual fact, there were already 10 rounds in each magazine.

If it became necessary to fire, the officer in charge would quietly indicate the ringleaders to one or more of his best shots. Then a volley would be fired over the heads of the crowd while the marksmen would pick off the leaders. This invariably leads to the demoralization of a mob. Usually, a volley would be fired by two ranks, one standing and one kneeling. Prior to this, of course, the mob would have been given adequate warning both by displaying banners ordering them to disperse and by giving orders to them through a loud speaker—possibly by an interpreter.

It is a particularly nasty business handling an ugly mob, and the officer in charge of the internal security company must be able to use plenty of initiative while his men must be able to stand unflinchingly in front of the mob. An official recorder with notebook and camera is always on hand to prevent possible untrue accusations afterward.

GORDON BOOTH
Ste. Therese, Quebec, Canada

IMPONDERABLES IN WAR

● I wish to congratulate you upon the fine article by Malcolm Mackintosh, "Soviet Strategy," in your May issue. I have read many articles by other distinguished authors, many of which struck me as being more science fiction than as studies of the problem of Soviet strategy based upon capabilities. Mr. Mackintosh did not try to paint a rosy picture of World War III, and its conclusions, with allied victory. Rather, he placed the imponderables that so often change a victory to defeat and reverse, within the limited scope of his article.

P. J. WEIGEL
Topeka, Kans.

NUCLEAR NUTS AND BOLTS

● It was a great pleasure to read Colonel Hayes's "Mushrooms are Poison" in the August issue. Too often one finds the vague "This discussion applies to both nuclear and nonnuclear situations." It was enlightening to "grapple with the nuts and bolts requirements of the nuclear battlefield." Indeed, so much so, that my interest caused later study with pencil and paper in hand.

LT. HENRY F. C. GEBELT
Fort Rucker, Ala.

ECONOMICS OF NATIONAL SECURITY

● A graduate-level correspondence study course on "The Economics of National Security" is offered free of charge by the Industrial College of the Armed Forces to qualified military and civilian personnel.

Specifically, it is open to (1) mili-

tary officers of all components of the Department of Defense and the Coast Guard, serving on active or inactive status in the grade of major or lieutenant commander or higher; and to (2) Federal employees with ratings of GS-11 or higher. A college education or its equivalent is highly desirable. Persons who do not meet these requisites but have compensating education and experience may be accepted for enrollment. All applicants are considered on their individual merits.

The correspondence course is based on the 10-month resident course conducted by the College at Fort Lesley J. McNair, Washington, D. C., for selected military officers and civilian personnel to enhance their preparation for important command, staff, and policy-making positions in the national and international security structure.

The correspondence version is integrated into five units of study: Background Information; Resources and Facilities; Processes in the Economics of National Security; Foreign Aspects of National Security; and Problems of National Security. It generally takes about one year to complete all units. A certificate of completion is issued to everyone who satisfactorily completes the full course, and a report to that effect is submitted to the appropriate authorities for inclusion in individual records. Reservists not on extended active duty may earn a total of 48 credit points for retention and retirement purposes.

Qualified personnel are urged to consult the local education services or civilian personnel offices to obtain application forms and further information, or to apply directly to the Commandant, Industrial College of the Armed Forces, Washington 25, D. C., ATTN: Correspondence Course Division.

MAJ. GEN. EVAN M. HOUSEMAN
Deputy Commandant
School of Extension Studies
Ind. College of the Armed Forces
Washington, D. C.

VALUE OF EXTENSION COURSES

● I think Captain Gallagher's blanket indictment of extension courses in the July issue calls for at least one kind word about this training method.

I have been enrolled in the program for a number of years, and have found they provide a fair to excellent introduction to subjects concerning which I knew absolutely nothing. I find them convenient; I do them at my leisure (if any). Finally, they can be utilized by persons who, for one reason or another (not the least of which is the Army budget) can not participate fully in other training.

Naturally, the program is not flawless. Some defects are characteristic of the correspondence method of instruction, others arise from the large numbers and widely varied backgrounds of the persons enrolled in the courses.

As for some possible improvements, I believe I profit more from a specific school text than from regulations, field manuals, and similar publications. Manuals are often a reference book and not a good introduction to a subject. Subcourses, particularly for junior officers, should not be overly optimistic about the ability of the student to absorb information. Principles should be stressed rather than obscure facts buried in the text.

CAPT. JOHN L. PRATHER
Washington, D. C.

FAULT IN THE UNIT?

● Captain Gallagher summed up his attitude and that of many other "dedicated reservists" when he said, "So

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after two hours we go home." And "To figure it another way, the government spent $150 in having us put on that march." To figure it another way, a commander wasted $150 of government money by marching his men during the scheduled two-hour drill. (I suppose it would be unthinkable to extend a drill period for 15 minutes.) Do I call this national preparedness? No, I call it poor scheduling and misuse of training time.

Captain Gallagher assures us his unit does not need the physical marching but he indicates he is mentally out of step by losing his own argument against extension courses. "Scrap the current concept of class work. Substitute an imaginative, continuing exercise (CPX) based on what we'll do in the next war."

Are we going to run such outfits on the fading memories of World War II or are we keeping abreast of the new techniques and doctrine being developed daily by diligently pursuing the only course we have: literature, printed material, extension courses? Surely Captain Gallagher, a writer, appreciates the power of the printed word, if only it is read, digested, and intelligently applied.

"Except for familiarization firing, or for basics, keep the .45s and carbines locked in the armory." I suppose the next step is to lock uniforms in closets and go to drill in civilian clothes, then lock the armory and assemble at the country club.

"With the nation depending so much on the reservist—in case he is needed—is it not the duty of all to see that he is ready?" Captain Gallagher asks. Certainly we depend on you. We expect you and all other reservists to be fully qualified. It seems to me the ills are all within the unit. Primarily, failure to utilize training time effectively. Make an estimate of the training needs of the unit, apply and correctly interpret the ATP, formulate a worthwhile training schedule and insist upon its application. Intelligently institute a realistic schedule within the framework of the current ATP, to include the exercises Captain Gallagher mentions, and by constant study of the latest developed doctrine, through the use of extension courses, you can be assured of correctly applying the latest concept in solving the problem.

Let's get out of thinking in terms of 120 minutes a week and why doesn't someone help us? The tools are there, and presently we have the time. Let's get to work. The job can be done and it is being done. We won't fail you if you don't fail us.

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UNCONVENTIONAL WARFARE

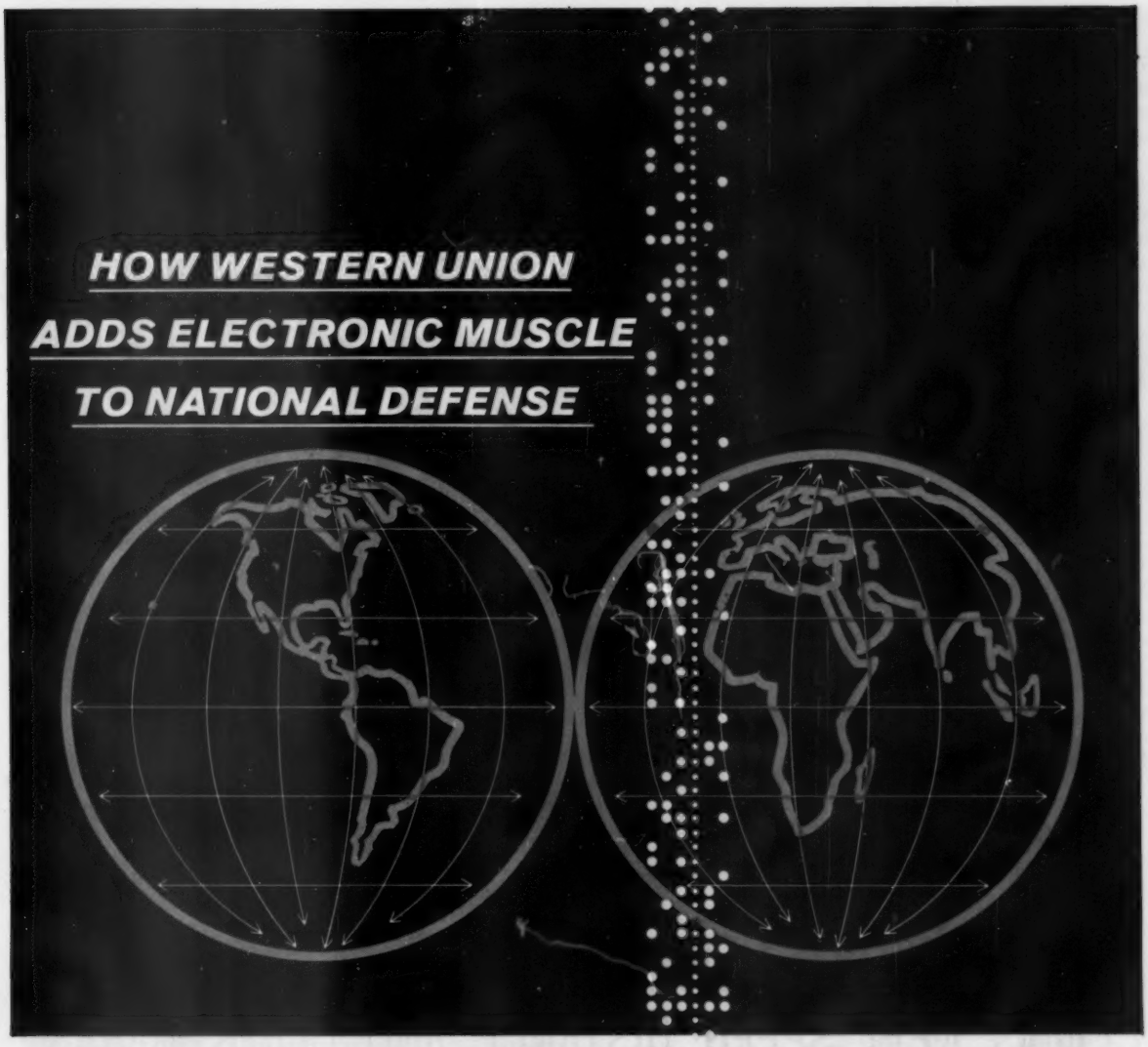
● Unconventional warfare, as the term usually is used, means guerrilla warfare and the use of small raiding parties in unexpected places. In my opinion, this is not the correct use of the name.

Guerrillas and raiders have been around from the earliest days, and their training and organization are essentials of any smart army's future plans. What is really unconventional warfare?

During all our wars someone has come up with wild-haired ideas and when they were sorted out, one of a thousand was worthwhile. During the Revolution a sergeant tried out an early submarine, and nearly did a successful mission, except for an inefficient weapon. This was unconventional by the standards of the times.

The Second World War being the largest of our military efforts, the crop of screwball strategy was unusually large. There was the man who developed the iceberg aircraft carrier, the Germans making counterfeit money, the British scattering false ration cards, and the radios sending out false rumors to keep people on edge. Some of this was ex-

(Continued on page 88)



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HU-1 record claim: 3:22.4 minutes—Pilot, Maj. Boyle

2 Climb to 6,000 meters (19,686 feet), Class E-1:
Current record: 11:0.1 minutes—held by French Alouette
HU-1 record claim: 8:10.2 minutes—Pilot, Maj. Boyle

3 Non-Stop Distance, Closed Circuit, Class E-1d:
Current record: 345.1 miles—held by Russian MIL-1
HU-1 record claim: 441.74 miles—Pilot, Maj. Boyle

4 Speed Run, 3 kilometers (1.864 miles), Class E-1d:
Current record: none
HU-1 record claim: 158.05 mph—Pilot, CWO Turvey

5 Speed Run, 100 kilometers (62.14 miles), Class E-1d:
Current record: 130.8 mph—held by Russian MIL-1
HU-1 record claim: 142.2 mph—Pilot, CWO Turvey

6 Speed Run, 500 kilometers (310.69 miles), Class E-1:
Current record: 136.02 mph—held by US Army H-34 (Sikorsky)
HU-1 record claim: 148.45 mph—Pilot, Col. Marinelli;
Co-Pilot, CWO Turvey

7 Speed Run, 500 kilometers (310.69 miles), Class E-1d:
Current record: 122.07 mph—held by Russian MIL-1
HU-1 record claim: 148.45 mph—Pilot, Col. Marinelli;
Co-Pilot, CWO Turvey

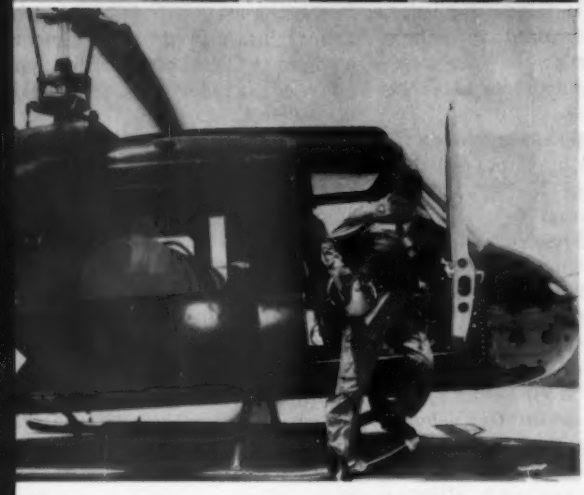
**Note:* All flights were under supervision of the National Aeronautical Association, and the HU-1's record claims have been submitted to the Federation Aeronautique Internationale and the N.A.A. for official recognition. Class E-1 is for all helicopters, irrespective of weight. Class E-1d is for helicopters between 3858 and 6614 pounds gross take-off weight.

THE MACHINE — *The turbine-powered Bell HU-1 Iroquois* is the first helicopter to be designed and built to Army specifications. It has a useful load of almost two tons and is capable of high speed flight carrying nine fully-equipped men, or performing tactical field maneuvers from suppressive fire missions to medical evacuation. The versatile HU-1 is now operational with 17 Army units, four of which are STRAC divisions. It will join 5 more commands before the year's end.

The "X" mid-side of the HU-1 marks the spot which N.A.A. observers used to make photo records and set timers during test runs.

THE MEN — Pilots for the new HU-1 during its record shattering flights were three veteran Army airmen, members of Fort Rucker's Army Aviation Board: Colonel Jack L. Marinelli, board president and the holder of two 500 kilometer speed records; Major Garrison J. Boyle, project officer and holder of records for 3,000 and 6,000 meter climbs, and the closed course distance record; and Chief Warrant Officer Clifford V. Turvey, project officer and holder of the 3 and 100 kilometer speed marks.

CWO Turvey and Maj. Boyle check course maps prior to speed record trials.



THE METHOD — The record breaking flights were made in a demanding eight-day series of tests at Fort Worth, Texas, home of Bell Helicopter, manufacturer of the new HU-1. During the flight periods, sealed instruments aboard the ship and timing stations manned by N.A.A. personnel at points on the measured courses, kept official data of the record attempts.

Col. Jack Marinelli returns from the 500 kilometer course after averaging 148.45 mph. Ground temperature during this phase of the record attempts reached a high of 98 degrees. Gusty winds also were encountered.

FOR OPERATIONAL TURBINE-POWERED FIRSTS, LOOK TO **BELL**
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ARMY authors

In the early post-World War II years it was old hat to say that a new breed of soldier-scientists was essential to the preservation of our nation. Unobtrusively such a breed has appeared, the vanguard being some of our young field-grade officers. These are men who feel just as at home at a Summer Study conference at Caltech or Arden House as they do on maneuvers at Grafenwohr or on a missile firing site at White Sands. Two of these men appear among our list of contributors this month.

Major JOHN P. TYLER, III *(page 27)* after the Korean conflict earned a Master's degree in nuclear physics at the Naval Post-Graduate School. Major PATRICK W. POWERS *(page 58)* did his post-graduate work in missile engineering at the University of Southern California. As it happens both of these officers are artillerymen, but that arm does not have a corner on this increasing breed. One thing we like about these men is that most of them have learned to express themselves clearly and logically in writing and speaking. This is a most necessary attribute, since a not unimportant task of these officers is to serve as a transmission belt for passing the word back and forth between the military and the scientific communities.

Closely related to the soldier-scientists is the soldier whose interests lie in the scholarly study of national strategy, foreign affairs and statecraft. These men are scientists, too: political scientists, and the Army has always developed some outstanding ones. Among its present crop, the name of Colonel WILLIAM R. KINTNER *(page 51)* certainly belongs. A hard worker, Colonel Kintner has written extensively for many periodicals, including this one, and is the co-author of a number of books including *Protracted Conflict* and the new *The Haphazard Years*. He did his post-graduate work at Georgetown University and is presently engaged with the Foreign Policy Research Institute at the University of Pennsylvania on a follow up to *Protracted Conflict*.

We have two civilian contributors this month, both students of military affairs.

GENE M. LYONS *(page 34)* is Assistant Professor of Government and Research Associate in National Security at Dartmouth College. The present article is drawn from a lecture Dr. Lyons delivered recently at Ohio State University.

FREDERICK M. STERN *(page 41)*, who lives in New Rochelle, N. Y., has long been a student of military policy. He is the author of *The Citizen Army: Key to Defense in the Atomic Age* (1957) and wrote "A-Bomb for Attack or Defense?" in our January 1960 issue.

Chaplain (Major) BEN E. SPURLOCK *(page 45)* tells us about Sergeant (ex-major) Comstock & Company. Major Spurlock, who is Post Chaplain at Camp Leroy Johnson, New Orleans, La., introduced us to Lieutenant Shipp's 8-Ball Express in our October 1959 issue. Many readers praised it, others damned it. We await your reactions to the new exploits of Shipp & Company.

A pointed One Army story is told on page 44 by Capt. GARY G. HYMEL, Corps of Military Police, who is Information Officer of the 39th Infantry Division, Louisiana Army National Guard.

Lt. Col. FAIRFAX DOWNEY, a former artilleryman, is well known as an Army historian. In addition to the classic *Indian-Fighting Army*, he has written *Sound of the Guns, The Guns at Gettysburg, Clash of Cavalry*, and the recently published work on Chattanooga, of which his article *(page 63)*, slightly condensed, is a chapter. A graduate of Yale, Colonel Downey served in both World Wars.

Two officers of the 82nd Airborne Division show how a unit of that outfit put its aviation to work *(page 54)*. They are: Capt. HENRY G. MOSELEY, Infantry, who, on his second tour with the 82d Airborne Division, is a member of its Aviation Company, and Capt. RICHARD G. STEUART, Infantry, who is S2, 2d Airborne Battle Group, 503d Infantry, Fort Bragg, N. C.

Our cerebrationists *(pages 69-74)* this month are a representative mixed bag of officers of all components.

Major ROBERT DE MARCELLUS, Transportation Corps, Florida Army National Guard, is a public relations consultant in Palm Beach, Florida. In Korea he was an infantry platoon leader.

Lt. Col. HARRY F. WALTERHOUSE, Military Police Corps, was commissioned from Indiana University ROTC in 1935. After a tour as provost marshal at Fort Jackson, S. C., he is now at the Civil Affairs School, Fort Gordon, Ga.

Brig. Gen. HAROLD F. HARDING was commissioned from the Enlisted Reserve Corps in 1929, and now is Division Artillery Commander, 83d Infantry Division. In civilian life he heads the Department of Speech at Ohio State University.

Capt. ALFRED A. ZAMPARELLI, Infantry, served a hitch in the Marine Corps before enlisting in the Army in 1950. He was commissioned from OCS in 1951 and served in Korea with the 23d Infantry. Before being assigned to The Infantry School he served as regimental communications officer and company commander in the 11th Airborne Division.

Lt. Col. KENNETH W. CROSS, Transportation Corps, enlisted in 1941 and was commissioned in 1943. His major assignments include Control and Planning Officer at the New York POE and Civilian Personnel Officer (Marine) at Seattle POE. He is now Secretary of the Army Transportation School at Fort Eustis.

Major ROBERT W. SMITHSON, Artillery, is currently assigned to the Army Electronic Proving Ground at Fort Huachuca. He enlisted in 1941 and was commissioned from OCS in 1943 after serving in an artillery unit in Alaska. During World War II he was with the 69th Infantry Division Artillery in ETO. Since then he has been a battery commander, battalion S3, and G2 in the 2d Armored Division.

Hiller 12 E sets aviation record, lands and picks up payload at 18,000 ft.

12 E, first light copter to erect entire powerline; 40′ poles, el. 5,000 ft.

34,500 lbs. of machinery to exploration mine in 8 hrs. mountain flying.

Microwave station on 4,000′ ridge; all 8 tons material; 2 days flying.

2½ mile powerline built in 6 hrs., 50 mins. with E's 305 hp at work.

El. 10,000 ft. Two 12 E's fly 80 gal. sprayloads; 60 flights in 4 hrs.

You are invited to write for full details.

THE ARMY GROWS 'EM TOUGH

How the Hiller 12 E Became First Choice of Commercial Operators

From the day it went into commercial service, the Hiller 12 E had a head start. It had an Army-proved H-23D airframe and an Army-proved H-23D drive system that hadn't begun to exploit its full strength.

The next step rewrote the specs on what light utility helicopters can do. Capitalizing on the H-23D Raven's dynamic components with a 305 hp Lycoming engine's power, light helicopter "firsts" of the kind above were bound to happen. Similar profitable operations are flown every day, wherever there's an E.

That's why the 12 E has become first choice—it's the most economical helicopter purchase today.

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H-23D 250 hp ***12 E 305 hp*** ***E4 320 hp*** ***Super E 340 hp***

Over a period of several months the governing bodies of the Association of the U. S. Army, the Air Force Association and the Navy League developed a set of mutual objectives for the strengthening of the Nation's security. The resulting joint statement—which was released to the public on 24 September—represents the first formal effort of the three major service organizations to highlight mutual objectives. AUSA has always held that an effective national defense requires balanced ground, sea and air elements. The joint statement is, therefore, in keeping with the aims and objectives of our Association. The statement follows:

Joint Statement on Defense Objectives Made by Army, Navy, Air Associations

While recognizing that the total threat of aggressive Communism covers a wide spectrum, we believe that the military threat continues to be the basic consideration.

To insure Free World security, the military forces of the Free World must be capable of deterring, repelling or defeating attack from any nation or combination of nations.

An adequate military posture must be measured against the threat it is designed to meet and not against an arbitrary fiscal ceiling. The American people under the free enterprise system can support whatever level of patriotic effort and expenditures is needed to defend their freedom.

National complacency concerning the communist threat and our ability to counter it is an internal enemy that deserves the full attention of all areas of our leadership.

The status of the professional military man deserves continuing review to assure that basic requirements of life, such as pay, and housing, are maintained at levels commensurate with his unusual responsibilities and sacrifices.

The ability of our population to survive surprise attack through protective measures must be provided for as a necessary element of our National deterrent posture.

HOWARD T. MARKEY
President, Air Force Association

LT. GEN. MILTON G. BAKER, *PARNG Ret.*
President, Association of the U. S. Army

JAMES G. JAMESON
President, The Navy League of the United States

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Developed for the U.S. Air Force, this technique has been successfully employed in both tactical and air defense radars currently in production at the Electronics Division.

One example is the new, truly 3-dimensional AN/TPS–27 tactical radar. This Westinghouse radar requires little or no site preparation, and successfully combines high data rate and mobility with fixed station performance. Here is another demonstration of capabilities for defense.
You can be sure . . . if it's Westinghouse.

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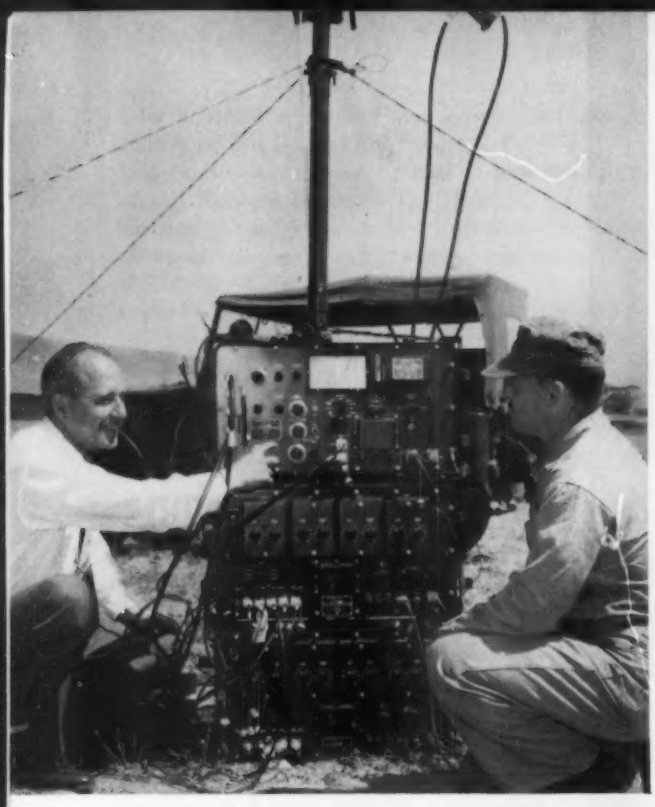
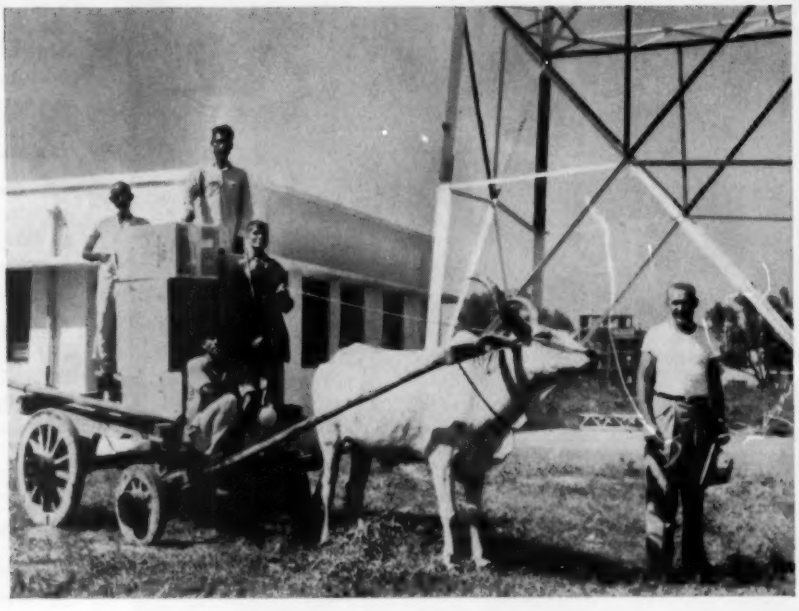


Instructing Marine Corps personnel in portable microwave communications equipment, AN/TRC-27.

In Germany, checking a proposed radar site for masking objects, preparatory to installation.

Delivering AN/CPS-9 weather radar parts for the Department of Meteorology, New Delhi, India.

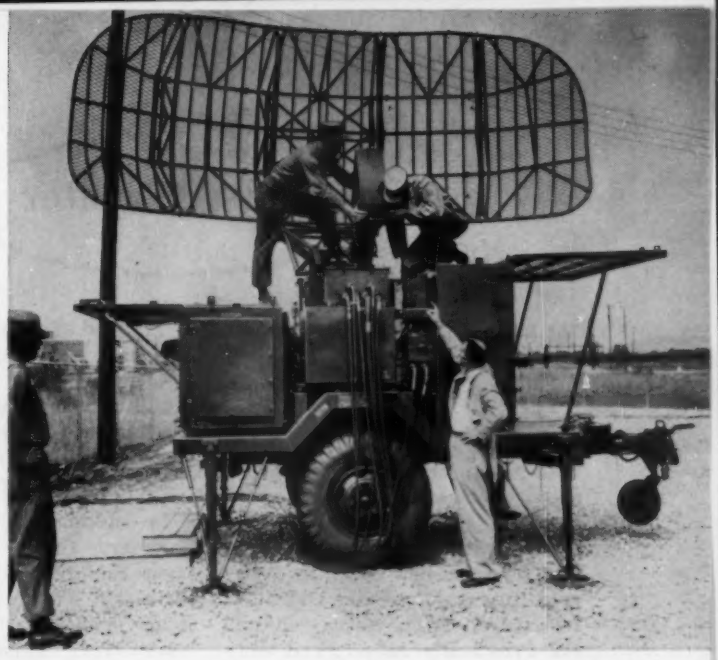


Now in their 18th year of technical assistance to

Raytheon field engineers, in over 100

work on installation, instruction and maintenance of

On-the-spot training in the field on part of the Hawk missile system.



About to board a B-47, this Raytheon field engineer provides technical assistance on electronic countermeasures equipment.

(U.S. Navy photo)

On Midway, Navy technicians receive instructions on adjustment of airborne navigational equipment.

the Armed Services and government agencies,

locations in the United States and overseas,

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RAYTHEON

EXCELLENCE IN ELECTRONICS

ARMY front and center

The Budget: Now and Next Year

When the recently deceased Congress appropriated more than the President's budget request for defense, Secretary Gates was left with the problem of whether to spend it or not. In some cases the Congress cut recommended programs, while increasing others, or funding some new ones. As ARMY goes to press, Secretary Gates has released all of the Army funds *in the President's budget,* and additionally has released the following sums:

- Almost $26 million to buy 165 additional M-60 tanks.
- Approximately $37 million to be invested in additional M-14 rifles, that shoot the NATO round of ammunition, and for increased NATO (7.62 mm.) ammunition.
- Another $600 thousand to buy the new 90 mm. recoilless rifle, an anti-tank weapon specially needed by airborne forces.

In addition to these amounts, Secretary Gates indicated at a press conference that there is an additional $93 million dollars for Army modernization that he is considering apportioning. The Army has supplied the Department of Defense with a list of priority items that are needed—the total exceeds the $93 million. There is no promise that all of the amount will be apportioned, but Secretary Brucker's hopes are high.

CIVILIAN AIDES MEET AT ABERDEEN

Master Sergeant Otto Hanel explains the operation of the new M-60 machine gun to Secretary of the Army Wilber M. Brucker, and the Chief of Ordnance, Lt. Gen. John H. Hinrichs, during the static display phase of the Seventh Annual Conference for Civilian Aides to the Secretary of the Army at Aberdeen Proving Ground, Md. The annual conference, held to orient the 64 Civilian Aides, all men of prominence in their communities, included briefings, two demonstrations of the latest Army equipment, and panel discussions with members of the Army staff and Mr. Brucker. Additional panels were headed by the Chief of Staff, General Lyman L. Lemnitzer, and the Assistant Secretary of the Army for Logistics, Mr. Courtney Johnson. Demonstrations of missiles, tanks, and aircraft—and all modes of transportation—were attended by an additional 75 guests from executive agencies of the government on Thursday afternoon. In addition to the Civilian Aides, there were approximately 160 other official guests from the Army staff.

The Budget in a Presidential election year is always a sticky problem. The exercise of preparing the budget to be submitted when Congress opens for defense expenses from July 1961 to July 1962—the FY 62 budget—began in January, 1960. A few months later, the Administration handed down the "guidelines" on the major programs, and amounts.

The Joint Chiefs of Staff were brought into the budget picture this year—a little more closely than usual, running their own "strategic reviews" of the service plans and requests, and at the urging of Secretary Gates, setting "priorities" on the nationally-needed projects. The last throes of this effort are made in October and November with the Secretary of Defense, and in December it goes to the White House, as the President prepares his budget message.

Throughout the effort, budget makers realize that the outcome of the election can have a telling effect on whether or not their efforts have been misdirected. But the budget that is presented will be an Eisenhower-Gates plan, and then can be altered by either a Nixon or Kennedy administration. Therefore, there is a strong temptation among the services to start "briefing" the candidates, and the staff members close to them, as soon as the nominating conventions have made the choices. This can be a dangerous occupation, for any service, if political leanings become apparent.

One distinguished and experienced Senator expressed his views as follows: "The best bet for any service, in these trying times, is to have its objectives and desires and needs clearly on the public record—especially in Congressional testimony. If that is accomplished, then the next thing is to stick with the Administration that is in command at the moment, and win any skirmishes within the framework of the guidelines that the government of the hour has established."

Fortunately, the Army objectives are rather clearly defined in resolutions adopted by the Association of the United States Army as well as being clearly on the record in testimony by Secretary Brucker,

(Continued on page 87)

CopterNews from Sikorsky

Marine helicopter test-fires Bullpup missile. As a Marine HUS-1 helicopter hovered at 1,500 feet, a jet of flame streaked from near its starboard side. The Bullpup missile flashed away—out to take a bite of its prey, a target floating in the Chesapeake. The 12½-foot, 570-pound Navy Martin Bullpup missile was the largest and first radio-controlled missile ever fired from a helicopter. Once launched, the pilot guides the missile to target by a switch on his control stick. The two together, Bullpup and helicopter, may turn out to be the perfect combination to provide close ground support for troops. It would implement battlefield firepower with effective punch.

Operation face lift. Thirty U.S. Army H-37's, largest helicopter flying in the free world, are being flown to Sikorsky's Connecticut plant for modification. Major face lifting items include equipment for automatic stabilization and for the standardization of communications. Other improvements will step up operating efficiency... extend the helicopter's range... and cut down operating and maintenance costs. The H-37, ordered from Sikorsky in 1954-55, set a world speed record of 162.7 miles an hour in 1956. Driving the five-bladed, 72-foot diameter main rotor are two 2,100-horsepower engines from Pratt & Whitney Aircraft.

Helicopters do the work of fire extinguishers. A forest fire was raging in Carbon Canyon, south of Los Angeles. Seven Marine HUS crews of HMR 361, carrying special fire fighting kits, bombed with chemicals and water the woodlands ahead of the fires. The blaze was stopped from spreading. Next, the fire itself was drenched and then finally extinguished with the same solution. Runs on the target were made at altitudes of 40 to 100 feet at speeds of 40 to 60 knots.

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ONE-MAN ANTI-TANK MISSILE

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ARMY editorials

That 'Same Old Stupidity' Ain't Necessarily So

Not long ago we received a letter from Mr. Marshall C. Lewis, Executive Vice President of Marsteller, Rickard, Gebhardt and Reed, Inc., a Chicago advertising firm. Pertinent portions of Mr. Lewis' letter and your editor's reply may be of interest to readers who find themselves confronted from time to time with questions similar to those Mr. Lewis poses. Mr. Lewis writes:

"Through idle curiosity I picked up a copy of your magazine in our reception room . . . idle curiosity prompted by the three years I spent in the Infantry in World War II.

"I am compelled to offer my congratulations on a superb publication! I literally read it (your August issue) from cover to cover. I was enormously impressed with the obvious intelligence and articulateness of your contributing authors, and I find it encouraging to think that the future of our Army is being managed (or hopefully, will be managed when some of these men are of a more senior rank) by men of such obvious imagination and intelligence.

"I must add, somewhat sarcastically, that it's a shame that I didn't meet more of them when I was in the Army. And also I want to comment on a newspaper story that I read just after I finished with your magazine. Under the heading 'Rigorous Schedule Faces Citizens Who Become Soldiers for 2 Weeks', the story is an account of a Reserve unit's two-week training program. If this account is to be believed it seems to me that the Army's basic approach is totally and absolutely unrealistic. I will detail these opinions:

"I get the strong impression that parade-ground spit and polish is not going to make much of a contribution in the next war, and I think it's pretty ridiculous to take time from a two-week training program to practice formal parading.

"I wonder if it is realistic to expect to have enough time in two weeks to build a man into good physical condition through exhausting marches and field work, or whether this time could be better spent learning some of the problems (for instance) of nuclear combat. . . . I refer to the article 'Mushrooms Are Poison' by Col. James H. Hayes in the issue of your magazine I read.

"Is the Army still so stupid as to teach marksmanship on a formal rifle range? Even in World War II, combat conditions had absolutely no relationship to the highly artificial conditions of firing from three positions under ideal conditions on a formal rifle range.

"So, as an interested citizen, I have somewhat mixed reactions. On the one hand, I am impressed with the enormous

ADAMS
CG, Third U. S. Army

BROWN
CG, V CORPS

ABRAMS
CG, 3d Armored Division

intelligence displayed by your contributors; on the other hand I read accounts of the same old army stupidity.

"What do you think?"

This was your editor's answer:

Dear Mr. Lewis:

Lots of letters come my way from readers disgusted or enchanted, but a few of them are as interesting and certainly few are as challenging as yours. I'm happy about the nice things you say about our magazine and its contributors, but let me pass on to an attempt to frame an answer to your question of why there is "the same old army stupidity."

The Army isn't as big as it was when you were in it (indeed at 870,000 it is too small for the many jobs it has to do), but it has I would guess about the same proportions as other endeavors, say journalism or advertising. That more of the soldiers who have vision and perhaps wisdom appear as contributors to ARMY isn't so much that I, as the editor, am unerring in recognizing vision or wisdom, as it is that the blind, the stupid and the lazy aren't often given to putting their ideas on paper. And for that I am thankful.

To the specifics of the three points you make from the newspaper story of two weeks of training. These Reserve and National Guard outfits vary according to the quality of their leadership, just as all human organizations do. Also sometimes the people above them don't do the kind of job that should be done and consequently the outfits don't get the word and the results are less than satisfactory.

How much time this outfit spent on "parade-ground spit and polish" isn't stated. Certainly not much time should be given to the practice of formal parades. Most such outfits have a day during the two weeks when the Governor or the Mayor or a general officer from the Army area headquarters visits the camp and the outfit puts on a parade for the occasion. Perhaps some other kind of demonstration would be just as good but a parade seems to be expected and, to tell the truth, lots of the soldiers and the Governor seem to enjoy it. But preparation for it can be overdone.

Most good outfits have learned to mix march formations and field work with tactical problems and weapons training. Certainly you can't whip a soft office worker into a lean and muscular soldier in two weeks but some physical conditioning along with learning tactics and techniques is not out of order. And indeed to carry out the tactics of nuclear combat described in the article by Colonel Hayes is going to require men in the very best of physical condition.

As to the third point, the teaching of marksmanship on a formal rifle range, I am surprised. It may be that the outfit mentioned is using the old known distance ranges and fixed targets, but I can assure you that the Army in what is known as its Trainfire programs has developed a most realistic and effective way of teaching marksmanship. It involves pop-up targets (silhouettes of a man's head and shoulders) that pop up at unexpected and varying ranges and angles of fire and drop when hit by rifle fire. Because of the electronics involved such ranges are costly and the Army hasn't been able to install them everywhere.

You asked me what I thought. I've tried to tell you. But if I haven't let me know and I'll try again.

WHAT'S BEHIND A BMEWS RADAR?

Years of experience—for as early as 1954, General Electric had conceived and developed radar equipment capable of detecting ballistic missiles at 1,000 miles. This was the forerunner of the AN/FPS-50 surveillance radar being provided by General Electric under subcontract to RCA for the Air Force Ballistic Missile Early Warning System (BMEWS).

The AN/FPS-50 radar equipment, with a range in excess of 2,000 miles, is a singular example of achievement in defense electronics. It is another milestone in General Electric's sustained engineering effort to develop and produce equipment to meet the unprecedented detection problems posed by ICBM's. 176-01

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Atomic power may free the tactical dog of his logistical leash

Major JOHN P. TYLER III

The Army's Nuclear Power Program

THE promise of controlled nuclear power as an almost limitless source of useful energy has in recent years filled the world with hope for better things to come. In some cases, the promise is empty, the hope nothing more than futuristic pie-in-the-sky daydreaming. But in many cases, the promise is realistic, the hope justified. Clearly, nuclear power will come to play a more and more important part in our everyday lives.

If, then, it is reasonable to count on the nucleus of the atom to provide increasing amounts of man's energy requirements, is there anything in the promise to interest an army that, in time of war, gulps awesome amounts of energy?

The answer is yes. The hope is that through nuclear energy, the Army will achieve the kind of mobility—freedom of movement—that military strategists of 50 years ago could only dream about. To understand the promise, one needs to have a firm grasp of the realities of the problem.

Undeniably, the one component of mobility that causes the most concern in modern warfare is logistic support. This is true not because logistic support is relatively more important than the other components; but because with more complex and demanding machines, adequate logistical support is harder to achieve. An army can no longer be certain that the supplies on which success depends will continue to reach the field of combat via fixed—and vulnerable—railroads and highways.

Fuel resupply is a prime example. The continuous present burden of fuel resupply, and the ever-increasing burdens of the future, have caused some military planners to say that modern armies have lost their old-time mobility. The truly mobile army of the future must be able to operate for days and weeks without resupply.

Air resupply is but a partial answer; anti-aircraft measures are improving, large tonnages and large items are difficult to handle through the air, and—perhaps most important—aircraft eat up in the fuel they consume, a large part of their cargo carrying capacity.

Here's where nuclear power holds an important promise of the future for our Army. With nuclear powered vehicles requiring little or no fuel resupply and with wheeled reactors converting nuclear energy to heat and electrical energy, the tactical dog would be free of his logistical leash.

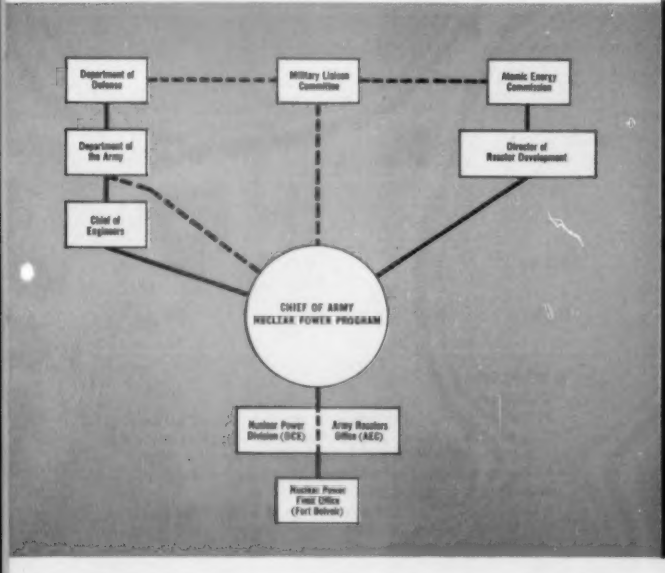

Department of Defense
Military Liaison Committee
Atomic Energy Commission
Department of the Army
Director of Reactor Development
Chief of Engineers
CHIEF OF ARMY NUCLEAR POWER PROGRAM
Nuclear Power Division (OCE)
Army Reactors Office (AEC)
Nuclear Power Field Office (Fort Belvoir)

Figure 1. Organization of the Army Nuclear Power Program

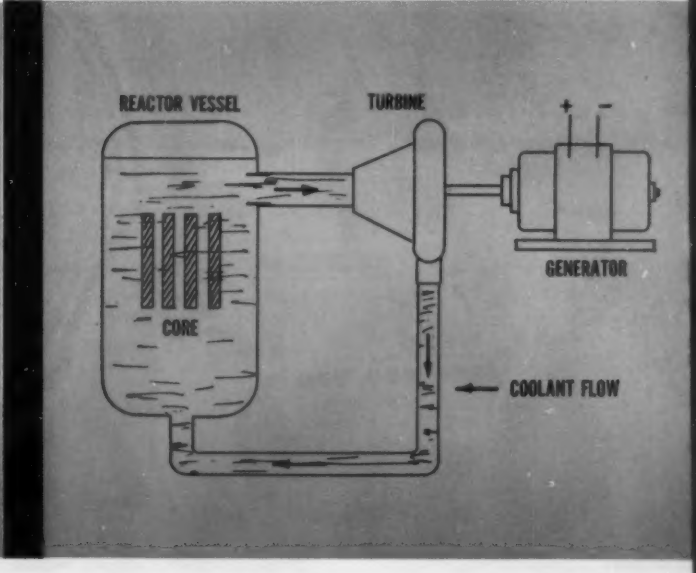


Figure 2. Simplified schematic drawing of nuclear power plant

A year's supply of mobile power

Imagine, if you will, vehicles that have fuel ranges of 50,000 miles! What is the logistic saving of an electrical power source that is mobile and can operate for a year without refueling? This question, combined with the overall requirement of increased mobility for the future Army, started the Corps of Engineers on a project now called the "Army Nuclear Power Program"—ANPP.

In 1952 Army and Atomic Energy Commission studies demonstrated that nuclear power could be had in certain areas of the world at costs commensurate with those of fossil fuels: Diesel oil, gasoline, and coal. But although costs were important considerations, the logistic advantage of no fuel resupply was—and still is—the primary overwhelming feature as far as the Army is concerned.

As an example, one typical reactor core can produce 2,000 kilowatts of electrical power for a year and a half, replacing up to 60,000 barrels of Diesel oil. Another way to visualize this saving is in weights—the 800-pound reactor core compared to a year's supply of Diesel oil is a ratio of 1 to 25,000. The core is delivered in a single aircraft no more often than once each year; the oil is delivered by tankers to pipelines, to tank farms, to be further delivered to the generating plants—a voluminous, continuous, and vulnerable supply line.

The Joint Chiefs of Staff confirmed the triservice military requirement in 1954, and the Secretary of Defense assigned to the Army the development of nuclear power plants for both heat and electricity at remote and relatively inaccessible regions. Within the Army the responsibility was given to the Corps of Engineers. Since this program is a joint development project with the AEC, the Chief of the Army Nuclear Power Program wears two hats (Figure 1); he is the Special Assistant for Nuclear Power to the Chief of Engineers and also the Assistant Director (Army Reactors) of the Division of Reactor Development at AEC. His is the same responsibility for the Army as Admiral Hyman Rickover has had for the Navy.

As the program evolved the overall objective of reducing the fuel resupply burden has become defined. The evolution of power plants is progressing from stationary to portable to mobile sources of power from 100 to 40,000 kilowatts.

In the long run, the Army wants nuclear power wherever it will improve operational capabilities. Once a reactor can operate on wheels, then nuclear powered vehicles are possible. The ramifications are staggering. Should one require energy, here is an energy depot—the nuclear reactor.

How the atom releases power

How does a nuclear reactor supply electricity, heat, and mechanical power? Figure 2 is a simplified schematic drawing. In a controlled chain reaction—a slowed-down atomic explosion—atoms of a fissionable material, such as U-235, fission or split. This ic accompanied by a large release of heat combined with radioactive products and radiations. The release of heat energy is controlled at a level commensurate with the ability

Figure 3. Army Package Power Plant No. 1

MOBILITY	POWER RANGE		
	LOW	MEDIUM	HIGH
	100—1000 KWE	1,000—10,000 KWE	Over 10,000 KWE
Stationary	SL-1	SM-1 SM-1A SM-2	Civilian Programs
Portable	PL-1 PL-2	PM-1 PM-2A	Not practical now
Mobile	ML-1	MM-1	MM-1A

Identifying Code—
S—Stationary
P—Portable (stationary plants packaged for easy transporting and field assembly)
M—Mobile (plants that are assembled and can begin operating shortly after arrival; MM-1 will be able to operate while the plant is in motion.
L—Low power range, 100 to 1,000 kilowatts (electrical output or equivalent)
M—Medium power range, 10,000 KWE and up
A—Indicates a field plant; for example: the SM-1A is the first field plant of the prototype SM-1 at Fort Belvoir. Later similar plants would be SM-1B, SM-1C, etc.

Figure 4. The Army Nuclear Power Program

of the reactor fuel elements to stand the heat and the ability of the coolant to withdraw the heat. The coolant—such as water, gases, oils, liquid metals—picks up the core's heat, and converts it into mechanical energy by driving turbines. The turbines can be coupled to generators which, in turn produce electricity. One also can tap this heat energy somewhere in the cycle and use it for other purposes—heating barracks, crew compartments, control rooms, purifying water, and so on. The electricity can serve a variety of demands, such as energizing high-powered radars or electrical motors to drive vehicles.

Many parts are omitted from Figure 2 for the sake of simplicity. Indeed, those omitted parts were so spread out over multi-purpose commercial plants that the first step in converting civilian developed reactors to military use was to reduce the myriad of parts to a few packages. These packages—basic components—were to be fabricated, pretested, transported to the "remote" location, assembled, and then operated as a plant.

The Army "package" concept

This is the Army's "package" concept, the effort that led to our first nuclear power plant, the Army Package Power Plant Number 1—(APPR-1) at Fort Belvoir, Virginia (Figure 3). This plant became operational in April 1957. Producing some 2000 KWE it has operated successfully for more than 22,000,000 kilowatt hours. Its name has been changed to the SM-1 following a code shown in Figure 4. The SM-1 is a prototype research tool for reactor engineering and a training facility for military operators and maintenance men of all three services. A total of 96 qualified operators have graduated and 106 men are in training. The SM-1 has also delivered emergency power to the post, during commercial power failures. After almost three years, it is still operating on its first loading of nuclear fuel!

To follow the developments since the SM-1's becoming operational, Figure 4 should be referred to, as it defines the programs by mobility and power ranges. It also simplifies the understanding of the code, which is derived from those two prime characteristics. The chart illustrates the pattern of development.

Known as the "power density" concept, the pattern is to increase the power output per ton of plant weight. Just as our first atomic bombs were large monstrosities which have since been reduced to much smaller tactical nuclear warheads with the same explosive power, so the SM-1's power will be packaged into successively smaller plants. When these plants can move with the future "shoot and scoot" Army as electrical power plants or as propulsion units for tactical and logistical vehicles, we will have reached the ultimate in the "power density" concept.

How far have we progressed to date?

The SM-1A operational in 1960

The first field plant, SM-1A, now is 85% constructed at Fort Greely, Alaska. It is to become operational this year and will have twice the output of the SM-1, about 4000 kilowatts of electrical power. As a stationary plant, the SM-1A will have required about 18 months of construc-

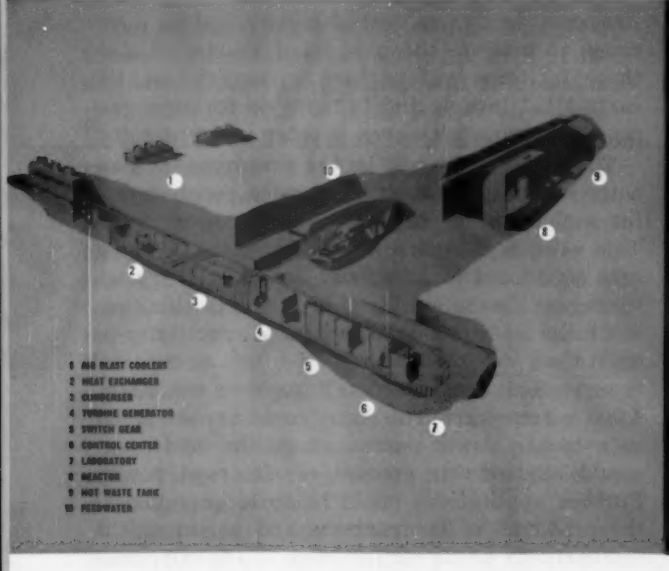


Figure 5. Cutaway view of PM-2A

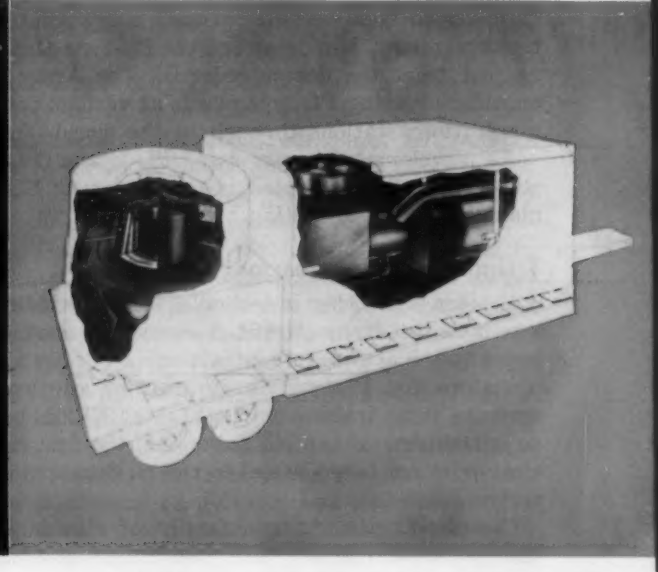


Figure 6. Cutaway view of ML-1 trailer-mounted power plant.

tion effort, exclusive of Arctic winter shutdown.

The next field plant, the PM-2A (Figure 5) was fabricated and tested at Dunkirk, New York. Packaged into about 27 air-transportable modules, 15 tons or less each, the plant was disassembled, flown and shipped to an ice-cap location, Camp Century, Greenland, and reassembled by an Army crew. As a demonstration, the most difficult package in weight and size was flown to Thule on 26 May, the remainder followed by ship. A greatly reduced on-site construction time of six weeks—as compared to SM-1A's 18 months—is a major factor in reducing costs, particularly in remote areas. PM-2A will furnish 1560 kilowatts of electricity and over a million BTU/hour of heat to a research city under the snow. When this polar research program is finished, most of the plant can be transported in packages to another required location (Figure 5).

The second operating prototype plant is the SL-1 at the National Reactor Test Station, Idaho Falls, Idaho. This reactor became operational in October 1958, and has demonstrated an amazing reliability. Last summer it passed a 1000-hour test with less than two hours of maintenance downtime. As the code indicates, it is in the low-power range, furnishing 360 kilowatts, of heat and electrical power.

The SL-1 serves as a research tool for reactor technology leading to portable versions—the PL-1 and the PL-2. Designs for both these portable reactors, based on the SL-1 prototype, are almost complete. The Air Force wants the 200 KWE PL-1 to supply electrical power and heat to distant early warning radar stations. The Navy, on the other hand, has the 1000 KWE PL-2 plant in mind for use in Antarctica. Admiral George Dufek, who until recently headed Navy Antarctica operations, has described the PL-type plants as just what the doctor ordered. The Army is considering using PL-type plants at various communications stations throughout the world.

As development progresses, PL-1 and PL-2 packages will be coupled into the parent SL-1 plant at NRTS for testing.

Training of nuclear-reactor crews

Besides pioneering in technology and providing a reliable test frame, the SL-1 serves still another important function—crew training. Not only are operators for PL-type reactors from all three services being trained on the SL-1 at NRTS, but so is the crew of the NS *Savannah*, the first nuclear powered cargo vessel in the U. S. maritime service.

Completing the Army's family of stationary and portable reactors are two other medium power plants, the SM-2 and the PM-1, descendants of the SM-1 prototype at Fort Belvoir. Both presently are undergoing component testing and design completion.

The SM-2, with a 6,000 KWE power rating (three times that of the Fort Belvoir plant), is being designed for tandem operation; that is, two SM-2s will be combined to meet requirements in the 10,000 to 12,000 KWE range. The reason is reliability—while one is being maintained, the other still will be working.

The portable reactor in the medium power range—the PM-1—is being built to furnish heat and electrical power to an Air Force aircraft control and warning station at Sundance, Wyoming. It will be started sometime in 1961.

The mobile branch of the Army's family of reactors now has three members, one in each power range. The standard for these plants is that they must produce electrical power from their carrying mounts shortly after arriving at the site where power is required.

The most advanced mobile system right now is the ML-1 trailer-mounted power plant (Figure 6). It is designed to supply the mobile field army with 300 to 500 KWE when and where needed. Component and engineering tests on the ML-1 are under way now and prototype testing will be carried out in 1961.

The ML-1 is unique. Gas, heated by the reactor core, is used to drive turbine generators directly. Accomplishing this technology was no small feat and the project illustrates the joint development of the gas-cooled reactor principle at NRTS in Idaho using a special facility which was activated in December 1959. At the same time, the Army activated a special facility at Fort Belvoir in December 1959, to develop and prove out the necessary gas-driven turbine generators. Research data from both facilities will be dovetailed to produce the final ML-1 reactor. Later, these facilities will be used to improve on the early ML-1 models and to move on to other gas-cooled systems with even greater power density.

The MM-1 plant will be the prototype of a reactor designed to meet tri-service requirements for mobile power in the medium power range. This work is classified since developments represent significant progress and unique military advantages. As an unclassified guide to thinking, we know that 1000 kilowatts of electricity is equivalent to 1340 horsepower of mechanical energy. Think of the many ways to use 2,500-4,000 horsepower! The Army could use the MM-1 as a mobile power source where the field army would require this amount of electrical power. Further applications could be to large vehicles; the problems of compactness and shielding the radioactivity would require large and heavy power plants initially. One application could be the overland train.

Nuclear-powered overland train

The overland train is thought of as a cargo carrying device. The SNO train, a diesel powered train with three cars, has operated successfully on the icecap in Greenland. The overland train might be nuclear powered by this MM-1, offering a tremendous operating range. As an educated guess, say, 50,000 miles, without refueling is technically feasible. The overland train is not tied to fixed and vulnerable rail lines or developed road nets.

The significance of this to the tactician may not be obvious, to the logistician it is. Nearly every exercise at Benning, Knox and Leavenworth which calls for more than a day's operation has a mobile supply base solution to the resupply problem. These mobile supply bases are fleets of trucks and armored personnel carriers, all of which consume large portions of the cargo they carry. The overland train could carry a half day's supply of essential items for a division in the attack. The combat commands of an armored division could have an overland train of fuel for the armored vehicles somewhere in the train's area or en route overland where present gas tankers cannot go. To the logistician, it is the answer to the problem of delivering tonnages from ports and depots to the battlefield when other means are interrupted. Since rail carries a preponderance of all supplies now, the interruption of vulnerable tracks and trains is surely to be a major interdiction program for the enemy's air, missiles, and guerrillas. What if Patton's Third Army had had a gasoline resupply capability provided by these overland trains? The devastated railways replaced by the Red Ball Express could not meet his needs in 1944.

The overland train is not designed to replace transportation means in being. Rather, it is to supplement the trucks, helicopters, railroads, and the future GOERs. If it did replace any particular means, it well might be certain transportation truck companies of the field army. For example, three companies of a total of 36 overland trains could replace 36 truck companies equipped with about 2000 trucks and result in a manpower saving of transportation personnel of some 5000 officers and men. This does not include all the other personnel who are needed to see that the 5000 men get to and operate in the field army. It is no wonder that the Transportation Corps has a 10-car conventionally powered train under procurement now. Nuclear power might provide the extra range and cargo carrying capabilities desired for the overland train.

This potential application of the MM-1 is a start. One could visualize many uses of the overland train other than cargo carrying if satisfactory shielding can be provided. I can visualize the pulling of a string of tanks or armored personnel carriers from the service areas to the field of combat. When needed, the completely diesel-fueled armored vehicles could move out to join the battle.

The overland train could transport complete or major portions of a tactical mobile missile system. The electrical generators for the transporter could just as well power the missile system's computers, radars, erectors, etc.

The overland train could be a complete command installation—a mobile CP. With automatic data processing, increased control and communications power requirements, some of the larger unit's command posts will sound like tank battalions in the attack with all the noise from the necessary and numerous generators and vehicular motors powering still more generators. The overland train could pull the CP into place (remember, about a 50,000-mile range capability), detach the various trailers for dispersion purposes; then, power the installation.

Nuclear-powered combat vehicles

The MM-1 may some day propel combat vehicles. It is certainly no secret that a fuel-independent armor operation would enhance our operating characteristics on future battlefields. Consequently, many Army planners have expressed the need for nuclear-powered armored vehicles. It is up to R&D personnel to fulfill this need by developing a power plant of the desired weights and sizes—and of course, at costs within budgetary limitations.

The MH-1A is a barge-mounted power plant to give the services a mobile plant with a large block of output power. Here is a mobile power supply that can move into a location, tie up, and furnish a block (10,000-20,000 KWE) of power for a year without refueling. When the task is over, it can simply move on to the next need. Eliminating the refueling situation frees about ten tankers yearly for other duties and permits allocation of the diesel oil to other priority demands. This mobile power source could serve places like Korea, Guam, Okinawa, Thule, McMurdo Sound in Antarctica, etc. Final designs for the first barge-mounted reactor will be selected for procurement in the not too distant future.

Thus, the Army Nuclear Power Program has an important future. There are two plants in operation now and two more to become operational this year. Moreover, we can look forward with confidence to large stationary electrical and heating plants as well as portable and mobile versions. The mobile power program promises the Army of the future inherent mobility with more flexibility to fast moving forces with no dependence on fuel resupply!

Clean Sweep by Army Marksmen

The Army won at Perry because it organized for victory

General Bruce C. Clarke

I WITNESSED the wind-up of the 1960 National Matches on 27 and 28 August where Army teams demonstrated the shooting skill which enabled a clean Army sweep of all main events with the rifle and pistol. In winning all five of the National trophies and the two National Rifle Association Championships, Army rifle and pistol shooters emerged undisputed National Champions.

Such extreme accuracy would defy the most vivid imagination. But, records are set to be broken and there are only a few old records still intact. Through the years the marksmanship competition has become keener among the Armed Forces and this competitive spirit has been a powerful influence in the attaining of higher scores. I am sure that our sister services will not be content to have the Army on top of the heap. Consequently, the race for first place will become progressively intense.

In winning the National Trophy Rifle Team Match as well as the coveted Infantry Trophy Match, Army teams blanketed the field as they took the first three places in each event. In the National Trophy Rifle Team Match, the All-Army team bettered the 1958 National Record by ten points, scoring 1485 points. USAREUR won second place and also surpassed the 1958 record as Sp 4 Willie D. Jordan blasted out a perfect 250 to garner the Pershing Trophy for high individual scorer in the National Trophy Rifle Team Match. Third place in the match went to Army Eastern Region.

The All-Army team won the Infantry Trophy Match with a score of 1,100, just seven points off the National Record established by the All-Army team last year. Additional strength was provided by the USAREUR and USARPAC rifle teams which placed second and third, respectively.

Army victories decisive

Throughout the rifle phase of the 1960 National Matches, Army firers won the main events even more decisively than in 1959. The Army again produced the NRA National Service Rifle Champion as Sp 4 James T. Lamm of USAREUR fired an aggregate 644 out of a possible 650. Of the high 33 scores, Army members placed all but three. In winning the National Trophy Individual Rifle Championship, PFC Ronald DeVies of Army Western Region scored 249-20V. The next seven places went to the Army. Sgt. James K. Avrit, of Army Western Region, firing in the President's Match, shot a possible 150. Second and third places were also taken by the Army. Of the 100 shooters selected to wear the "President's Hundred" brassard, 69 were active Army, four were National Guardsmen and one a cadet from the USMA. This exceeded the number from the Army who won the honor last year. The Army also improved in the long-range matches, winning two out of three of the 1,000-yard events.

Army teams again annexed the Nevada, Roumanian, Enlisted Men's and Rumbold Trophies and set new records in three matches, including a 400 possible in the tough Roumanian Trophy Team Match.

One-two-three in Gold Cup pistol match

An Army objective for 1960 was to win the highly prized "Gold Cup" trophy awarded in the National Trophy Pistol Team Match. The USARPAC team won that trophy this year with USAREUR and Army Eastern Region placing second and third. This marked the first time an overseas command has won the trophy. In the National Trophy Individual Pistol Match SFC Andrew N. Jackson of USARPAC set a new National Match Record and the Army took 16 of the 20 top places. The Army continued domination of the pistol events by winning 18 out of 22 NRA events and setting five new records. Another highlight was SFC William B. Blankenship's brilliant new record of 2636-128X in capturing the NRA National Individual Pistol crown. It is significant that all major commands contributed substantially to the Army victories with USAREUR and USARPAC displaying exceptional strength.

The Army National Guard, Reserve and ROTC teams repeated with impressive showings. The New Jersey National Guard and the Sixth Army Reserve teams won honors in their class in the National Trophy Pistol Team Match. The U. S. Army Reserve Rifle Team was the best reserve unit in the National Trophy Rifle Team Match with a score of 1464, bettering last year's mark by 23 points.

The great depth and talent demonstrated by

SP4 James T. Lamm of the European Command rifle team posted 644 out of a possible 650 to win the 1960 National Service rifle championship at Camp Perry. Thirty of 33 high scorers in the NRA rifle championships were members of the Army

the Army points to the soundness of our new regional organization of fielding and training teams for National Matches. The All-Army Teams, and teams representing the Eastern and Western Regions, USAREUR and USARPAC were trained under the sponsorship of the U. S. Army Advanced Marksmanship Unit. The USAAMU's training guidance and weapons support have contributed mightily to the Army's marksmanship program. Another essential ingredient to this success has been the interest, understanding and generous support of the commanders at all echelons in the furtherance of the Army-wide Competitive Marksmanship Program.

I am well aware that for the Army to maintain its enviable position in National and International marksmanship circles, continuous emphasis is required at all levels of command in the development of new and improved shooters. It is not too early to begin planning and training for the 1961 National Matches nor even for the World Championships at Cairo in 1962.

ROTC Cadet Paul W. Renne of Bozeman, Montana (lower left), receives the Hearst Rifle Trophy from General Clarke for winning the high ROTC award in the National Individual rifle match. SP4 Ronald L. DeVies, Jr. (lower right), of the Western Region rifle team scored 249 points—20Vs out of a possible 250 to become high individual award winner in the National Individual rifle match.

The colleges should be a source of professional career officers instead of massive numbers of reserves

GENE M. LYONS

The Campus: Recruiting Grounds for Professional Military Officers

ONE of the most trying problems the United States has had to face in recent years has been the necessity of accepting force as an instrument of foreign policy. The responsibility has been assumed, but not happily, and certainly not without reservation. Indeed, there is an understandable anxiety on the part of many that modern weapons make the use of force an essentially irrational act and reduce to a point of ineffectiveness its practical utility as a means of realizing national goals.

Relating force to foreign policy has little significance without developing the military means of supporting policy objectives—in terms of organization, materiel, and manpower. All these put heavy demands on government, resources, and society. Some of the questions to be answered are: What is the role of the military in the formulation of national security policy? Is there a limit to the portion of the nation's economic wealth that can be allocated to defense? What are the dimensions and the character of the military forces we require?

These questions bring the problems of national security into the very heart of national life: into political campaigns, into the calculations of business and industry, into the personal values and plans of citizens, and into the objectives of colleges and universities. The involvement of higher education in national defense occurs at many points. Our interest stems from the recognition that colleges and universities are the largest source from which the services can recruit the intelligent and educated young men they need to build a professional officer corps. The service academies can no longer do the job alone, and an expansion of the academy system is neither desirable nor politically practical. It must be done through civilian institutions where the Reserve Officers Training Corps is currently the major device for recruiting. Our question: Is the ROTC adequate to the task?

MILITARY manpower policies have seriously lagged behind the strategic response of the United States to the security requirements of the cold war. Since 1947, we have followed a policy of containment and deterrence designed to restrict the Soviet sphere of influence and prohibit the Soviet Union from using military force to extend its power. During the ensuing years, adjustments have had to be made. Primary reliance on nuclear weapons and long-range bombers (and now missiles) has given way to the development of a more "flexible response" to the range of conflict situations that could arise. Military programs have had to be brought into close coordination with foreign and economic policies and with plans for arms control.

Despite these changes, the basic nature of

American strategy remains the same, with military manpower policies following several steps behind. The selective service arrangements of World War II were permitted to lapse after 1945, and not until 1948 did Congress pass a new draft law. Nevertheless, within three months of its passage this law became inactive as the result of budget restrictions, and remained so until the Korean conflict broke out. Korea underscored the inadequacies of military manpower policies as logic never could.

To meet these failings, Congress passed the Universal Military Training and Service Act of 1951, the Armed Forces Reserve Act of 1952, and the Reserve Forces Act of 1955. Taken together, they provide a draft law to keep the active forces up to authorized strengths, a minimum period of active duty training for men who enter directly into the reserve components, and continual training for reserve units. As such, they respond admirably to a need for massive reserve forces. But they are hardly appropriate to the development and maintenance of a highly professionalized military force and well-trained mobile reserves that the policy of deterrence demands under current conditions.

Until very recently American response to the manpower requirements of military planning was almost entirely in terms of the traditional concept of reserves. The development of the professional forces became a by-product, left to chance, patriotism, and the peaks and valleys of the labor market. Only by 1957 did a shift begin to develop in emphasis from reserves to a strong professional structure. In May of that year a Defense Department advisory committee, headed by Ralph J. Cordiner, reported on "the kinds of incentives and conditions needed for motivation and retention of sufficient numbers of the professionally skilled officers, enlisted personnel, and civilians required by our Armed Forces today and for the foreseeable future."

Translated into the Military Pay Bill of 1958, the major provisions of the Cordiner report now provide a revised military pay scale and emphasize merit rather than longevity as a primary condition for promotion. When the draft law in the 1951 Act came up for review in 1959, the Defense Department stated that, if higher enlistment rates could be accepted as a positive sign, the pay bill was working well. Nevertheless the Department asked that the draft be continued in order to stimulate "enlistment programs" and assist "in the procurement of officer personnel." At the same time, Charles C. Finucane, Assistant Secretary of Defense, publicly stated that "it has been the firm objective of all services to obtain all military manpower through voluntary means and thus obviate the need for the draft."

American military manpower policies thus have a dual character: through a variety of incentives, the services are trying to retain trained men and strengthen the professional structure of the forces; at the same time, recruitment continues to be based on the draft and the attractiveness of reserve act provisions that offer a choice among a variety of ways of meeting military obligations. It is this very duality that helps pinpoint the essential weakness of the ROTC program. ROTC-trained officers comprise the largest single commissioned group entering the services, but they usually leave after their obligatory tour of duty. The reasons are varied, but in 1958 a subcommittee of the House Committee on the Armed Services was told that basically their loss can be "attributed to the fact that these officers have never intended to make [the military] a career when they first entered the program." They are recruited on the basis of accommodation between reserve requirements and their own civilian plans. This, in a word, is no way to run a professional army, navy, or air force.

Students become ROTC cadets in order to meet their draft obligations without disrupting their education and to enjoy the privileges of officers. These motivations are no less evident in the case of the Navy "regular" program where joining ROTC also means a college education at Government expense. Only rarely do students join with the idea of pursuing a professional military career. This indicates lack of neither patriotism nor courage. They are simply reacting to the spirit of military recruitment that has been encouraged since the Second World War, that continues to be articulated by the services no matter what steps they are taking in other directions, and that is generally accepted throughout the country. The low retention rate of ROTC officers is therefore not surprising.

A first step in making the ROTC adequate to the task of developing a strong professional force is to recognize the program's primary objective. It might be argued that this has already been done. The Air Force requires ROTC graduates in the rated (pilot and navigator) categories to agree to serve on active duty for five years after commissioning. At the same time, the Air Force is planning to increase the current two-year requirement for non-rated officers who will be playing a major role in "the shift from a predominantly manned force to a composite aircraft-missile force." Navy ROTC cadets who enter the flight training program also must agree to an active-duty tour of almost five years while all those undergoing the subsidized "regular" program now have a requirement of four years, as opposed to two for the non-subsidized "contract"

students. Only in the case of Army ROTC is there no provision for a first tour of active duty beyond two years. For that matter, there is opportunity to enter active duty for only six months and then undertake a substantial reserve commitment.

Nevertheless the longer active-duty requirement has a number of disadvantages under current conditions. In many instances the prospect of the longer tour tends to channel students into the Army program or to give up ROTC entirely. Thus the selection base for the career service is reduced. At the same time, it is not certain that the retention rate of those who do continue will go as high as is necessary to maintain a strong professional structure, if the idea of a career is emphasized only through the indirect, somewhat coercive method of a longer tour of active service. Indeed, the history of the Navy "regular" program which has always carried with it longer active duty than the statutory requirement, as well as other career incentives, would seem to prove the point. The "regular" program has been operating since 1946. In the spring of 1959, the Chief of Naval Personnel told the House Appropriations Committee that "all the emphasis we can muster is being placed on this program now to try to bring up the present retention rate of 24 per cent to a higher figure so as to provide about 600 officers a year who become naval career officers."

Emphasizing the career rather than reserve objectives of military manpower requirements would thus seem to be a reasonable step to take in recruiting. This suggests, for one thing, that the name of the program should be changed. The ROTC is neither a "reserve" nor a "training" program. It is a recruitment device with only a modicum of training that is most effectively carried out during summer camp or cruise and not within the atmosphere of the campus. A similar suggestion was made by the Committee on Civilian Components which undertook a comprehensive review of reserve forces in 1948. The recommendation to change the name was, like other recommendations of the Committee, left to wither on the vine. It not only wilted under the Army's fear that reserve requirements would be downgraded and come under the pressure of organized reserve groups. It also failed through a disinclination on the part of the Truman administration to undertake a shift in military manpower policies that might have put new burdens on the national budget.

A CHANGE of name would have a psychological effect, but it could be sustained only if it were accompanied by more substantial changes. These would have to take into account competing demands for educated young men and the attitudes of the students themselves. The Cordiner Committee's proposals and the legislation they inspired certainly begin to make the military profession more attractive in terms of pay, allowances, and promotion. They permit the military profession to compete with others in our society and to satisfy the desire for job stability and fair prospects of advancement. Needless to say, more needs to be done along these same lines. But efforts to retain young officers will always be handicapped if few of them are interested in a military career when they first enter the services.

The steps taken to interest young men in a military career cannot altogether eliminate a number of fundamental obstacles to greater retention of ROTC graduates. For one thing, the profession itself, as already suggested, suffers from the concept of the citizen-soldier. Even though military leaders are elevated to the level of national hero and even though military themes are profitably exploited by movie writers, toy manufacturers and cartoonists, the profession is not highly esteemed by young men deliberating on the choice of a career. The image persists that military leadership will come from the academy system and that everyone else in uniform is really a civilian in disguise who is very much the better for it and will only be needed in case of extreme national emergency. This is by far the dominating attitude of parents and faculty advisers whose most vivid exposure to military affairs came during the Second World War.

Beyond the persistence of the reserve concept, an obstacle lies in the often sharp differences that exist between the values of the military profession and the values of the academic community. Against the soldier's concept of duty, honor, and love of country, faculty members are prone to be more critical and doubting. It is the teaching faculty, moreover, that largely controls the intellectual and emotional tenor of colleges and universities despite the proliferation of administrative groups in recent years. And their skepticism of institutions that soldiers almost instinctively accept without question, should be recognized as being wholly consistent with the controversial spirit of an open society.

There is also the obstacle that comes from the competition of other career opportunities. It is probably true that the degrees of responsibility young officers can expect to attain, exceed those that most men will reach in private industry. Nevertheless, private industry can outstrip the services in offering the "illusion" of important assignments. In matters of salary, as well, the advantages of private industry may be more illusory than real. Unfortunately these illusions are supported by the value structure of society and their limitations are not easily exposed.

There are, finally, certain disadvantages in the military profession which have no comparison with those in other careers. In military service there is constant moving about; unsettled and perhaps unsettling housing and schooling; giving up the advantages of mobility by getting committed to a profession in which the skill structure is somewhat specialized and the possibility of transferring to other occupations is complicated by the lack of home-based roots; finally, there is possible exposure to physical danger in a period of history when the nation lives daily with the risk of open conflict.

Thus, on balance, there is real doubt that the military services can attract intelligent and educated young men without special inducements. The threat of the draft is no longer adequate. It is not only getting less effective as monthly calls become smaller but it also tends to extend the concept of temporary, reservist-type training rather than to further the idea of a professional career. What we need is a professionally oriented, federally subsidized, flexibly managed program of officer recruitment—an Officer Education Program for college and university graduates.

LIKE all American society, our higher education is characterized by a decentralized, pluralistic structure. The role of the federal government is a controversial one, at best. A scholarship program tied to officer recruitment should thus be consistent with educational programs of other government agencies. These include projects under the National Science Foundation, the Public Health Service, and the National Defense Education Act, that are designed to develop certain skills and human resources needed to meet national purposes. This is not to encourage the drawing up of a "master plan" for education and manpower, but only to urge full realization of the broader implications of any military program.

The need for coordination without, as well as within, the Department of Defense, suggests that more of the planning, and, perhaps actual administration of a college recruitment program should be taken out of the military departments and placed in closer relationship to the Office of the Secretary of Defense. Moreover, very often ROTC affairs continue to come up to the Secretary through the Reserve Forces Policy Board. The Cordiner Committee was an *ad hoc* group that was, except for a short reconvening, allowed to dissolve. Today there would seem to be as vital a need for a continuing advisory group on the problems of professional forces as there is for one concerned with citizen-soldiers. Again, the organizational arrangements at the highest levels of the government tend to tie problems of college recruitment to the functions of the reserves. The details of any kind of a new program, however, should be hammered out by a group that can focus on the wider manpower needs of the services. (Senator Alexander Wiley recently introduced a joint resolution to establish a Commission on Manpower Needs for Defense in the Space Age. The purpose of such a commission would be "to assess the manpower requirements for defense in the space age, to formulate a program for meeting the complex training needs of defense personnel in that age, and to provide recommendations with respect thereto." If recruitment seems to be ignored, the Commission would also be instructed to deal with "the adequacy of existing procedures for meeting overall manpower needs for national defense in the space age. . . .")

THERE are other reasons for suggesting more responsibility for the program in the Office of the Secretary. The need to deal with three services having three different systems and three different approaches, confounds the whole recruitment problem and would confuse any attempt to gain a singleness of purpose in emphasizing the career objectives of the program. As it is, general principles agreed to at the Defense plane filter down through departmental channels to be executed by officers who are far removed from the policy level and are forced to abide by directives that interpret basic decisions within the safety margins of bureaucratic caution. Nothing is more frustrating to the colleges and universities than the impersonal procedures of the current programs, and nothing could more easily doom a new program than to permit staff operations to undermine basic purposes. Indeed, one might hazard the suggestion that the less administration the better. In this respect it might be pointed out that the Navy already uses the Educational Testing Service to select under the "regular" program. It would seem wise to encourage the use of existing national and local educational facilities for as much of the operation of a new program as is practicable.

The Navy's regular program offers several precedents, principally for developing subsidized education as a recruitment tool for the armed services. Legislation to extend the program to all three services was in fact initiated both before and after the Korean conflict erupted. In the first instance, it was blocked by the obstacles of service differences and budget restrictions; in the second, it hardly seemed necessary since ROTC ranks were being swelled under the heavy pressures of the early post-Korean draft calls. Neither situation exists today. The nation is committed to heavy defense expenditures, draft calls are low, and other methods of widening the ROTC base, such as compulsory military training, are being

The military profession suffers from the concept of the citizen-soldier. Military leaders become national heroes and military themes are exploited by Hollywood, toy manufacturers and cartoonists, but the profession itself is not highly esteemed by young men deliberating on the choice of a career.

challenged. Moreover, the need for some kind of scholarship plan is already recognized by the Army and Air Force. In the Army, the Ordnance Corps has been especially aware of the critical shortage of well-educated specialists in the career officer ranks and has urged a program of subsidized education to help meet this failing. At the same time, the Air Force is seriously considering a two-year scholarship plan to supplement steps it has already taken to strengthen the professional basis of its college recruitment.

An extension of the scholarship program is both a major factor and a controversial one. The lower-than-desirable retention rate of the Navy's regular program would, on the surface, seem to indicate that subsidized education is no assurance of filling the career ranks. And indeed it isn't. Nevertheless, one qualification to any such deduction has already been suggested. The Navy's program, no less than the others, has suffered from being related to a larger program primarily concerned with reserve requirements. But beyond this, there seems to be no question but that the quality of cadets under the Navy regular program is, from an academic view, higher than that of students in other ROTC programs. In this respect, it is important to underscore that the objectives of college recruitment should be qualitative as well as quantitative. A scholarship program should be conceived as a device through which to select as well as to attract candidates. Its value and, indeed, its costs need to be assessed, not in isolation, but in relation to the total program, including its professional orientation and the elimination of ineffective campus activities.

In addition to scholarship assistance, a college recruitment program needs the highest degree of flexibility that is possible. For one thing, there should be arrangements for recruiting college graduates who do not join campus programs or who attend schools where the services have no military units. The regular Officer Candidate Schools already offer this opportunity. Nevertheless, special programs such as the new Air Force Officer Training School for college graduates might be a preferable alternative since they emphasize the importance of education in a military career and provide a means of bringing special skills into the services where shortages might exist. In the latter respect, they might be highly selective in order to avoid conflict with the campus programs.

Flexibility in campus-based programs, on the other hand, means arranging for students to sign up at several stages during their college experience. Practically speaking, the major reason for requiring students to register early is to increase their contact with military officers in order to strengthen their motivation for a service career and to prepare them in the rudiments required for their first assignment. Recently all three services (in varying degrees) have reduced the amount of military instruction in recognition of the benefits of a general education as a pre-professional base to a military career. (This is also a trend that can be said to be behind recent curriculum changes at both the Military and Naval Academies.) Students who initially join a professionally oriented program, with or without scholarship assistance, will certainly have already demonstrated positive motivation in responding to the career plan on which the program is based. At the same time, preparation for first assignment during college years may well be important for men who are only going to be on active duty for a short period of, say, two years. But where the initial commitment is (as it should be for all scholarship students) for four or five years, the advantage of having a man ready for his first duty immediately on graduation needs to be weighed against the more important advantage of widening the entrance gates and, therefore, the potential number of young men for the career service.

Registration cannot, of course, be held open indefinitely. The final opportunity for joining might thus be related to the time when the student decides on the field of academic study in which he is going to concentrate. In most colleges and universities this choice must be made by the end of the sophomore year. Any such arrangement would permit the inauguration of a two-year scholarship program, such as that envisaged by the Air Force, alongside a four-year program such as that now operated by the Navy. At the present time, where compulsory ROTC is maintained, the decision to stay in a military program is in fact deferred until the end of the sophomore year. But as compulsory ROTC is challenged and dropped (and this certainly seems the trend), the majority of students will be put in the position of those now in voluntary schools: forced to commit themselves during the first hectic days of

their freshman year. In such circumstances there can be little hope that the decision to join a military program will bear any relation to the career plans they will undoubtedly be developing during the four college years.

WHAT has been said thus far emphasizes the policy determinations that have to be made by the federal government, especially by the Department of Defense. It largely leaves unsaid the essential role that college and university faculties and administrators must play if any such program is to approach success. This role involves, at minimum, a commitment to help meet a national manpower need, a recognition that the armed forces cannot recruit college graduates for the career service without special inducements and a willingness to incorporate the needs of the military into the career counseling and placement services available to students and graduates. But there are major barriers to these efforts. In many schools, administrators look upon the current ROTC programs as an insurance policy against a period of national emergency, and thus want to retain marginal units with small enrollments. At the same time, most faculty members regard military programs in general, and military programs on their own campuses in particular, with indifference or, on occasion, with antagonism.

General mobilization under extreme international tension or in the crushing event of general conflict, is undoubtedly a state of affairs we could come to. In either event, neither the history of the Second World War nor speculation on the future indicates that a college or university will be spared a student shortage if it has a military recruitment unit on campus. At the same time, what is more likely is a continuing state of tension in which the professional requirements of the services remain high while undergraduate populations continue to increase. Under these conditions, colleges and universities have little to gain by insisting on maintaining military units where, by the measure of common sense, the costs bear little relationship to the results. Yet even if the unit were discontinued, graduates of these schools could still be offered military career opportunities through the college placement service if the recruitment program is sufficiently flexible to provide such alternative channels.

On campuses where military units are retained, the importance of faculty support cannot be emphasized too strongly, and thus faculty attitude is of some consequence. Yet support is not to be won through cajoling or insistence. College faculties are not likely to shy away from opposition to administrative authority when a legitimate opportunity exists and, unfortunately, ROTC often offers just such an occasion. Some faculty members object to the concept of a strong military force on the basis of personal conviction. But most object to the presence of poorly taught, externally controlled, vocational courses in institutions that are presumed to be dedicated to the pursuit of excellence. It is thus not unexpected that the recent moves to substitute college courses for military instruction have won solid faculty support. A recruitment program based on the premise that a general education is the best foundation for a military career, will go even farther in encouraging faculty understanding and, perhaps, active participation. In this respect, as well as in eliminating academic burdens now carried by students because of ROTC courses, the scope of the military program on campus is closely related to the problems of recruitment.

THE task of launching a career officer recruitment program on college campuses is not an easy one. The problems and tensions reflect, in the most sensitive circumstances, the predicament with which this article began: the necessity of accepting force as an instrument of foreign policy. What we need is close cooperation between government agencies and educational institutions. What is at stake is the capacity of an open society to meet the requirements of national security.

My suggestions can be summed up as four principles to be applied to the development of an officer recruitment program for college and university graduates:

- It should be a professionally oriented program, devised to complement other federal programs of higher education and largely directed from the Office of the Secretary of Defense.
- It should include, as a major inducement, provisions for subsidized education.
- It should be a flexible program which offers opportunities for the recruitment of men already graduated and for entry at several stages during the college experience.
- It should be concerned with pre-professional education for a military career.

The program that might take shape from the application of these principles would be building on existing arrangements. It would nevertheless be responsive to military requirements in the light of a realistic appraisal of strategic developments and the dominant system of preferences and goals in American society. To deal with officer recruitment in narrower terms is to keep marking time. In the past, there has been an almost compulsive tendency to patch, repair, and adjust, but never to attack, the premises on which the ROTC programs were established. The day would surely seem to have come to take a bolder approach.

The case for effective reserve forces standing ready

Frederick M. Stern

Disarmament and a Citizen Army

PUBLIC interest in disarmament concentrates upon the most powerful weapons: long-range bombers, missiles, and nuclear weapons, rather than upon rifles, artillery, or tanks. All nations would draw a deep sigh of relief if the present threat to entire cities and populations would be removed. But, as the representative of the United States disarmament effort has stated, the nations of the West cannot give up their missiles, long-range planes, rocket-carrying submarines or atomic weapons because such a step would leave their numerically small forces without the means of replying to an attack by the large ground forces of the Soviet Union.

The superiority of the Soviet forces is even greater than the numbers of formations in active service may indicate. For they are backed by very large reserve and territorial formations—mostly army—many of which can be thrown into combat in a matter of days or weeks. Moreover, the Soviets are strengthening these reserves in order to make up for the reduction of their active formations. As long as the ground forces of the free nations are vastly outnumbered by those of the Communist states, disarmament of atomic weapons, missiles and air forces, even if effectively controlled and fully implemented, would leave the world at the mercy of the Communist dictators.

However, the free nations have relegated this bitter truth to the subsconscious because it touches upon a hideous guilt complex: they know that, with all their great inventions, efforts, and expenditures, they have fallen down on the elementary job of building strong reserves for their front-line combat forces and for territorial service.

To evade this task is becoming increasingly difficult, especially for countries situated close to the Communist empires. Yet, as soon as it is mentioned, it is immediately vetoed as "impossible." Presumably, the free nations have not sufficient manpower. And if this excuse is refuted by population statistics such as cited by General Maxwell Taylor in *The Uncertain Trumpet,* we are told that the creation of strong reserve forces is too expensive and would drive the free nations into bankruptcy, or force them to reduce their air, missile, and atomic weapons sharply. Moreover, we are told, the creation of large reserve forces would bring about the "garrison state" and "militarism."

The case for a Citizen Army

Now it is entirely possible that the creation of very strong reserve forces would justify the aforementioned objections, at least as far as the cost element is concerned—if there was no other framework for achieving it than the conventional, semiprofessional or "cadre-conscript" army; the only type people seem able to think of for such purposes. Such an army consists of preponderantly professional cadres into which citizens are conscripted for 18 to 36 months of continuous service in the ranks. However, there does exist a better solution. Large effective reserve forces standing ready at any time can be created at a fraction of the cost of conventional-type forces, and in a way that eliminates all political and psychological fears. The type that fulfills these demands is the "citizen army."

The characteristics of this system are, first of all, that it drafts every able-bodied man for military training; second, that the training periods are much shorter than in conventional armies, with the initial period lasting from a few weeks

to one year, but generally four to six months; thirdly, that much advanced training takes place during subsequent years in "refresher" courses, mostly lasting a few weeks; and finally, that the training and leadership cadres consist quite preponderantly of non-professional officers and non-commissioned officers, men who are trained and continue their training for leadership, specialist, and staff positions, backed by a minimum of high-caliber professional instructors, technicians, and commanders.

The continued membership which reunites the men periodically in their "refresher" courses is just as important as the training given in the first year. It keeps them ready for action against any threat, external or internal. It welds them into a homogeneous force motivated not by indoctrination with fanaticism or utopian theories, but by the simple thought that "free men must be prepared to defend their freedom or lose it" as Arthur Koestler has said. And the hard, purposeful training which is compressed into a minimum of time and designed to educate every man from the first day on for the special kind of service and for the promotion that is commensurate with his skills and talents fills the trainees with a spirit of civic responsibility that is an effective antidote to communism.

A vast reservoir of special talents

This system can furnish the ready, full-strength reserve formations needed to back up the active first-line divisions. In addition it provides the forces needed for territorial, anti-air, and civil defense. If sound principles for recruitment, classification, training, and advancement are applied, the quality of the leadership and specialist personnel is of the highest caliber; for a citizen army, air force, or navy, with its short training periods, can draft the candidates for these positions from the vast reservoir of talent of the entire nation, whereas a professional or cadre-conscript army, recruiting such personnel for many years of service on a professional volunteer basis, must be satisfied with what it can get—some able men, but many who are less so. Such ample supply of talent pays further dividends. Capable men can be trained for higher and more difficult jobs in very brief courses; and once promoted, they command the natural, whole-hearted respect of their subordinates.

The preponderance of citizen soldiers in the leadership of these forces should remove all fears about dangers to democracy. Any lingering doubt in this respect will be put to rest if we remember that Switzerland, Sweden and Israel rely on this system. It was used for many years in Australia, whose armed forces made decisive contributions to the winning of the First World War and distinguished themselves again in the Second World War. Similar successes were won in recent years by the citizen army of Israel. The citizen armies of Switzerland and Sweden have contributed importantly to keeping their countries out of war since the times of Napoleon I—a testimony to their deterrent value.

Not too costly, not too burdensome

This system, combined with the powerful weapons of the regular forces, can enable the free nations, especially those of Europe, but also Turkey and other Asian countries, to face the large armies of the Communists with confidence and to fill the needs of territorial defense of the air and missile age. It is not too costly. It is not too burdensome for the citizen. And it is more humane and democratic than any other solution. It has only one drawback: it meets many inveterate misconceptions and, in the United States, the apathy that results from the country's location between two oceans. These are obstacles which, as far as this nation is concerned, may perhaps prove insuperable—as long as things don't become worse.

Other nations, however, may not suffer from the same inhibitions. In an age when the security of all nations is so closely interwoven the creation of strong reserve forces should not be rejected out of hand as impossible merely because the U. S. is not yet prepared to accept it, just as the demand for missiles, air forces, and atomic weapons has not been rejected as impossible because other NATO and SEATO nations were unable to fulfill it. Yet this is what has happened. With few exceptions, responsible statesmen and military leaders have so far declined to take the creation of strong citizen reserve forces under serious consideration, were it only for other countries, and many have not yet taken cognizance of this possibility.

This state of affairs has led to unfortunate consequences. Other governments have been dissuaded from creating citizen reserve forces and thereby filling some of the gaps in the NATO defenses. As a result, the United States and its allies are forced to perpetuate, and indeed to increase, their one-sided reliance on atomic weapons which impairs the flexibility of their policies, especially with regard to disarmament.

The Communist party is an army

Nations which are living closer to the Communist states, or are exposed to internal threats, are likely to feel the need for citizen forces much more strongly because they must fear more than direct aggression; they must face a fact that would threaten them even if the Communist states should abolish their regular armed forces com-

pletely—the fact that, as Raymond Aron has put it, the Communist party itself is "an army as well as a church." It actually is a military organization of great aggressive potential.

The Communists have achieved their successes by the activities of comparatively small minorities. They have subdued nation after nation by the clever use of deceitful propaganda which always has been combined with widespread violence and terror. In every case, the Communist minority has been—and still is—organized along strictly military lines, and carefully trained for violent action. Every party member must perform the tasks assigned to him, no matter how repugnant or dangerous, at any time of day or night. True, the Communist party tries first to persuade people, but in the background of its "ideological" work there lurks always the threat of organized violence under the leadership of men trained for it in Moscow or Peking, and backed by the armed and economic power of the Soviet Union or Red China.

Against a tightly organized minority working in such an ambivalent manner, the majority of a nation is in danger of losing out unless it is organized to meet the *full specter* of the threat. And here we come to the reason why the Soviet Union may find complete disarmament not only acceptable, but even desirable: after any kind of disarmament, no matter how deep it may cut—even if it should go down not only to tanks and planes, but to machine guns, mortars and rifles—the free nations will continue to face the deadly threat of military forces which go under the name of Communist "parties."

But is defense against dangers of this nature really a matter of *military* consideration? It is, because, wherever the initial, preponderantly political effort has proved insufficient, the Communists have employed greater and ever increasing degrees of violence. Starting with civil disorder and local terror, they have proceeded to employ paramilitary action, which they have stepped up, if necessary, to the scale of regular warfare. This happened in China, in Greece, and in Vietnam. Only if the citizens of the free nations are themselves organized and trained in a manner that deters their external and internal opponents from aggression even at the lowest levels of violence can they begin to consider a reduction of their arsenals of modern superweapons.

And even then some of these weapons may continue to be needed as long as the kind of violent struggle lasts which the Communists have chosen to call "political." Let us not forget that long before the rise of communism some of the longest and most terrible wars, including civil wars, have started as "minor" or "political" incidents. Nor should we forget that in many wars a nation that feared to lose stepped up the caliber and frightfulness of its existing weapons or developed new weapons as, for instance, the tank, poison gas, and missiles. In a future conflict occurring after disarmament, a nation unwilling to accept defeat or compromise may well retrieve, or produce again from existing designs, devastating superweapons that have long been outlawed or destroyed. Let us face the disappointing but inevitable lesson that he who wants to avoid large-scale violence, and to ban its tools, must in the first place stand ready to deter or smother small-scale violence, a task for which the present forces are too strong in type and far too weak in numbers.

Self-confidence precedes disarmament

The creation of large ready citizen reserve forces would enable the free nations to regain the kind of self-confidence that must precede disarmament. This measure would also go far to give such confidence to the nations on the opposite side. This side-effect is highly desirable; for we must be careful not to "over-deter" them by one-sided reliance on atomic weapons, strategic air forces and missiles, lest they be panicked one day into attacking the United States or its allies with preemptive action of catastrophic proportions.

Nor should we permit the Communist leaders to use the free world's one-sided build-up in superweapons as a pretense for such a blow. To this end it is not enough for the statesmen of the great democracies to issue assurances of their peaceful intentions. Even if the people on the other side should be fully convinced of the truth of these statements, men like Khrushchev and Mao are past masters at distorting facts. With the creation of large effective citizen reserve forces the free nations can make it more difficult for Khrushchev and Mao to deceive their peoples. For the military preparedness of the West would assume a complexion which is not only more balanced and effective, but also more patently defensive, especially if with the maturing of their large reserve forces the Western powers should find it possible to retrench their strength in mass-destructive superweapons.

The creation of citizen reserve forces is a step which the free nations can take *one-sidedly*, without waiting for any agreement, and which many of them would take if the nature and advantages of such forces would be fully understood. Though in and by itself no act of disarmament, it would enable the West to enter upon realistic disarmament negotiations. It would contribute to the relaxation of the present fears and tensions which must precede effective disarmament.

When Army National Guard Pelicans and Razorbacks get together with Army Reserve Longhorns, a story worth telling results

Capt. Gary G. Hymel

ONE ARMY SUCCESS STORY.

This is a success story.

It is the story of how an Army National Guard outfit and an Army Reserve unit meshed forces at a summer camp in a training experiment that enriched both groups.

And in it lies a vital message to units interested in conserving forces and effecting the "One Army Concept."

The two units were the 39th Infantry Division, Louisiana-Arkansas National Guard, and the 75th Maneuver Area Command (MAC), Army Reserve, of Houston, Texas.

The 39th has the age-old mission of perfecting itself for ground warfare, while the 75th MAC was created to provide realistic battles for training troops.

A new concept, the 75th MAC was formed in 1957 to serve as an umpiring group in the Fourth Army Area. The only other MAC group is the 87th, in the Third Army Area.

The 75th MAC has operated for three years, setting up and running "paper" wars. Among them is the giant "Cloverleaf" exercise in which Fourth Army active and inactive units meet at Fort Hood, Texas, annually to serve as a headquarters in a large-scale "paper" war.

But Maj. Gen. Whitfield Jack, then 75th commander, wanted to work his unit out in more than "paper" wars. He wanted some field experience for his umpires.

He tried to sell several units on the usefulness of his umpires. To his amazement he was met with reluctance and hesitancy.

He then put through a long distance call to Maj. Gen. George W. Trousdale, Commanding General of the 39th. General Trousdale leaped at the offer. He accepted immediately and a series of meetings was planned.

Leaders of the 75th went to New Orleans and together with 39th representatives laid preliminary plans. Later they met at Fort Polk, where the 39th trains during the summer. When summer camp rolled around, the men of the 75th MAC were ready. Within three days of arrival they were running the platoons of the 39th through a realistic, live ammunition field problem.

Success was immediate. So efficiently was the problem run, that it soon was apparent there would be time for more problems. So General Trousdale asked Colonel Felix Davis, a Houston contractor who is commander of the umpiring group of the 75th, to set up a problem to be run at night.

This was another success. The groups then went into squad problems in the second week of camp.

Said Colonel Davis:

"We welcomed the chance to add to the original request. We wanted to be of service, we wanted to have a sort of a 'guinea pig' to work on, and the 39th asking us to set up new problems on the site gave us a good test."

Close cooperation between the Guard and Reserve units was in evidence throughout the two weeks.

When the added problems taxed 75th communications facilities, the 39th stepped forward with wire systems from the battle groups. "The communications men must have been hand-picked, they did so well," Colonel Davis said.

And when the 75th MAC needed rations, the battle groups fed the Texans.

Colonel Davis said the training was the most constructive his unit had ever had. The 36 officers involved will now be formed into a cadre to train other members of the unit for similar exercises.

In having the 75th MAC run the unit problems, the division freed a group of its own officers to perform other important duties. Previously, the brigade headquarters had been charged with running the problems.

Now that success has resulted from the Reserve-Guard experiment, the 75th MAC is looking for more units to help.

The Eight-Ball rides again and in a heart-warming way shows how the Army takes care of its own

Major **BEN SPURLOCK**

Comstock's Lode

LIEUTENANT Melvin (Skip) Shipp, Commanding Officer of the 909th Truck Company, closed the 201 file and glanced across the desk.

"Welcome to what is called the Eight-ball Express, Sergeant Comstock. We can use you. You have a very impressive record: Sicily, Italy, the Far East."

"Thank you, sir." There was a touch of bitterness in his voice as he added: "I always thought it was pretty good. Evidently the Army thought otherwise." His weathered face hardened. "For seventeen years, three months and eighteen days I was qualified to be an officer. Then all of a sudden, I'm wearing these." He glanced at the chevrons.

Skip felt the irrational twinge of guilty defensiveness that comes in the presence of another's misfortune. "Want to talk about it?"

"There isn't much to tell, Lieutenant. I just got caught in the down draft." He relaxed a trifle in his chair and stared, unseeing, at the 8-ball paperweight on Skip's desk. "Commissioned shortly after Pearl Harbor, worked my way up to captain. Had one of the finest rifle companies in the Army. Then, when the war was over, somebody needed an adjutant and I got the job." He shrugged. "That's the way it went from then on. I made major and never got back to troop duty. I guess I've had about every staff job there is: including military government, and even a stint as an interpreter in Sicily." He shifted in his chair. "I have been told that that's what ruined my promotion chances: too much staff and not enough command." He met Skip's eyes. "I didn't ask for those jobs, sir. I asked for command. But I got staff jobs, and I did the best I knew how. It really hurt when I was passed over the second time, and knew I had had the course." He grinned fleetingly. "I always thought that Passover was a religious holiday until a few months ago."

"At least you kept your sense of humor."

"You have to in a deal like this, Lieutenant," Comstock replied soberly. "Otherwise, you'll go sour on everything and then you're no good to yourself or anybody else. It's bad enough without that."

Skip agreed. "I imagine it *is* pretty rough, especially on the budget."

Comstock nodded. "That is where it hurts the most. There are other hurts, 'way inside, like the way some of your old buddies make it a point not to see you. Those things are hard to take, but that kind of a hurt isn't a matter of survival. Money is. When your take-home pay is cut in half, it isn't easy to adjust. I almost didn't come back in when I found out what I'd be making as a sergeant. Diane—that's my wife—she wanted me to take a civilian job. But like I told her, the Army is in my blood. Besides, I hated to quit so close to retirement. I figure I'm entitled to that much."

Comstock's inflection when he mentioned his wife prompted Skip to ask, "Does Mrs. Comstock feel better about it, now that you decided to stay in?"

The sergeant traced his cap insignia with a tanned finger. "No, sir. She hasn't got used to it at all. You know, she won't even come to the commissary for fear of running into some officer's wife she used to play bridge with." He shook his head. "I swear, I don't know what to do to get her out of the dumps. She just mopes around our trailer, day in and day out."

"Well, there's an active noncommissioned officers wives' club here, and the Red Cross can always use more volunteer helpers."

"No dice, Lieutenant." Comstock was positive. "I tried that. Diane won't have any part of it, and that's what worries me about her. She used to love helping people. Always up to her ears in some hospital or orphanage or welfare project. But not any more. I believe that if I could find just one thing to get her out of herself, she's be all right." He waved a finger. "Just one little bitty project, and I think she'd snap out of it. But I haven't found it yet." He stared blankly at the wall. "The way it is now, I almost hate to go home at night," he said as if Skip were not in the room. "Every day the same thing. 'Roy,

we lost a son in Korea. Isn't that enough to give? Do we have to give up our pride, too? If you're not good enough to be an officer, why be a sergeant? Forget about the retirement. Let them keep it. Then we can go home.' That's what I hear all the time." He came back into the room. "Sorry, sir. Forgot where I was for a minute."

Skip thought desperately, trying to find out what to say. Finally he gave up. "Anyway, we're glad to have you aboard. As far as this outfit is concerned, you've come home."

Comstock smiled. His eyes lost their aloofness. "Thanks for those kind words, Lieutenant. I needed to hear them."

A SPLIT second after Comstock had left, the first sergeant, preceded by his stomach, entered the office. "Lieutenant," he wheezed, "that other new man you wanted to see is outside. If you don't mind my saying so, sir, he's trouble."

A certain disillusionment was in Skip's voice as he replied, "Murph, you and I have seen all the new men that have come into this outfit. Have they ever looked like anything *but* trouble?"

"I know, sir, but not like this lad. He is a paperback edition of Al Capone."

"I've read his record, Murph. That's why I sent for him. I'm hoping we can stop trouble before it starts. Sort of guide the boy along."

"Well, sir, like they say in Japan, 'rots o' ruck,' " Murphy replied lugubriously. "I personally ain't makin no book on this character bein guided none a-tall." He went to the door. "The Lieutenant wants to see you, Vitrano."

The lad who swaggered into Skip's office had the wary look of an apprentice hoodlum. Dressed in fatigues, he nevertheless managed to convey the impression that he was wearing a black motorcycle jacket. He approached The Presence with a casualness that bordered on insolence and flipped a laconic hand in the general direction of his ducktailed hair.

"You wanta see me?" he inquired in a tone that suggested he might be willing to do the Lieutenant a favor.

Skip laced his fingers together on the blotter. His blue eyes took on the warmth of a glacier lake. "You will go back outside, knock and reenter," he directed in crisp tones. "When you report to me, you will do it correctly. You will remain at attention until I give you at ease. . . . And while you're out there, get rid of that gum."

Vitrano's second appearance was in marked contrast to the first. He snapped into a brace and threw a salute that could have been used for a model. "Private Vitrano reporting as ordered. SIR."

Skip returned the salute. *"That's* more like it. You can remain at attention." He studied the sullen face before him. "According to the form four in your file, you were a juvenile delinquent."

"A couple lousy rumbles and a guy gets tagged as a juvie. Big deal!"

"What kind of lousy rumbles, Vitrano?"

One of the shoulders twitched. "Usual stuff. Gang fights and like that. Penny ante heist once in a while. Mostly fights, though."

Skip was agreeing more and more with the first sergeant's analysis. "Switchblades or zipguns?"

Again the twitch. "I've carried a blade," Vitrano admitted with quiet pride. "A guy's gotta protect himself."

"Well, just in case you brought any hardware with you, get rid of it. You don't need protection in this outfit."

"Man, I ain't even picked my pad and you're buggin me, awready," Vitrano cried in tones of outrage. "How come you say I got a blade? I ain't got no blade."

Skip shook his head with weary patience. "All I said was, 'in case.' And also in case you hadn't heard, it has been a custom in the Army for a long time to throw in the word 'sir' once in a while when you're talking to an officer. Since we don't plan to change the rules just because you're here, you might keep it in mind."

"Yes—sir."

"As long as you are in this outfit, I expect you to behave yourself. What happened in civilian life is past. You've been given a clean bill of health and a chance to make a new start. Don't louse it up." He leaned back in his chair. "We've got a good Army, Vitrano, and this is a good outfit. I plan on doing my part to keep 'em both

Vitrano swaggered in, "You wanta see me?" he said throwing a hand in the general direction of his ducktail

that way. You're not in the slums any more and there's no need to fight your friends. So, there will be no knives, no rumbles, no trouble. Ah—you dig?"

"Yessir."

"You just keep digging old Daddio, and we won't have any hassle. Dismissed!"

As Vitrano reached the door, Skip called, "By the way. That fiddle player's hairdo—as you might say—bugs me, man. Get it trimmed short all around, or we'll see that you, like, whitewall it."

IT was a fine, balmy afternoon, several days later. For a change, everything in the 8-Ball Express was running smoothly. Skip returned from battalion headquarters with a game of golf uppermost in his mind. He breezed into the orderly room, full of bounce and enthusiasm.

"Aloysius," he cried, taking a practice swing at an imaginary ball, "God is in his heaven and all's right with the world, as the feller says. I am going out for a little cow pasture pool. Our noble battalion commander has invited me to join his fours—What's the matter with you?"

Murphy had a face that seemed made out of red-veined plastic. By some secret mechanism it could be twisted to utter wordless sentences and express shades of emotion so clearly it would have made him a fortune in silent movies. At this moment it was declaring The Egg Has Hit The Fan.

"Sorry, Lieutenant, I ain't doubtin that the Good Lord is in his heaven like you said, but things ain't too right with this end of the world. We got Sergeant Comstock and Vitrano in the hospital. I dunno exactly what happened. Seems there was a hassle in the barracks room about noon. Nobody will tell me nothin about what went on. All I know is that Comstock's got a slashed arm and Vitrano is laid up with a busted shoulder or somepn."

Skip pounded one fist into his palm. "I knew it. *I knew it!* Two weeks of peace and quiet and then all hell breaks loose. I bet money that Vitrano knifed Comstock."

Murphy shook his massive head. "I dunno, sir. I tried to find out, but you know how these guys are. The minute there's trouble, they scatter like quail. Comstock come in here bleedin like a stuck hog and Vitrano was with him moanin about his shoulder. I sent 'em to the hospital." He considered the indignity of it all. "I'm supposed to be the first soldier around here, and nobody tells me nothin."

By the time Skip got to the hospital, the two warriors had been put to rest in adjoining beds.

"What happened, Comstock?"

The sergeant grinned a little. "Just a slight accident, Lieutenant. Vitrano and I—well, you know—" he gestured with his good arm. "Sort of horsing around and I got my arm cut on a nail or something." At the darkening face of his commanding officer, he added hastily, "It's just a scratch, sir. The doctor says I'll go home in a couple of days." His eyes were full of guile as he added, "They want to be sure it didn't get infected from that rusty nail."

"And I suppose you got cut on the same nail, Vitrano?"

"Nossir. Like the sergeant said, we was, you know, like scufflin and I stumbled into a post. My shoulder's just out of joint, like."

Skip looked from one to the other. They were amazingly innocent.

"Now that we have had our day's quota of fiction, let me give you *my* version. You" he addressed Vitrano, "decided that things were too quiet and started a rumble with Sergeant Comstock. That's the way *I* figure it."

Vitrano's quick averting of the eyes told Skip he had hit close to the truth.

Turning to Comstock, the CO continued. "You didn't really expect me to buy your story, did you? Nobody else will, either. So why don't you just tell me what happened, before we start the investigation?"

Vitrano's olive skin turned the color of old parchment. The sergeant pushed his pillow into place with his left hand. "I wish you wouldn't start any investigation just yet, Lieutenant." He spoke with deep intensity. "Please, don't do anything about it until I get out of here. I want to talk to you about it. Please?"

"You've been in the Army long enough to know that it is just plain stupid to try to cover up something like this." Comstock's eyes continued to plead. After a long moment, Skip nodded reluctantly. "OK. I'm being conned, but OK. I'll go along with you for the time being." He shook his cap at the sergeant. "You better know what you're doing and you better come up with a better story than the one I just heard, buster, or there will be *two* pelts on the barn door."

IT was a disturbed commanding officer who wandered around the company area, looking in on the men at their work. In every case, conversation dried up as soon as he approached.

The one exception to this rule was Private First Class Gavin. He had been honored by being selected as barracks orderly. When Skip entered the building, Gabby was sitting on a footlocker, spit-shining his boots while singing a mournful chantey about unrequited love.

Skip chose a footlocker across the aisle. Very casually he baited the hook and made his first cast.

"Must have been quite a shindig here during the noon hour."

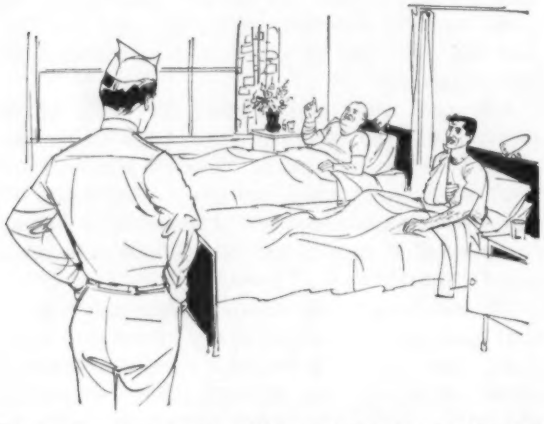
"What shindig was that, Lieutenant?"

Wrong bait. Skip reeled in and lit a cigarette. "The one between Comstock and Vitrano." He offered a smoke to Gavin, who resembled a reluctant bass as he took it. "Thanks . . . 'fraid I don't know what you're referring to, Lieutenant."

Skip leaned against the post. "Oh. I thought you knew about it." He twitched the line enticingly. "Everybody else does." He watched Gabby squirm uncomfortably, then made another cast. "I just got back from the hospital. Comstock and Vitrano are going to be out of circulation for a few days." The bigmoutn bass was tempted. Skip twitched the lure again. "Too bad you weren't in on it, Gavin. It was quite a hassle. *You* always know everything that goes on in this outfit. Can't see how *you* could have missed this. You must be slipping, boy."

STRIKE!

"Well, now, Lieutenant, I don't want you should labor under the derision that I don't know *nothin*



The two warriors were in adjoining beds when Lieutentant Shipp arrived at the post hospital

about it." Gavin carefully set down the boot he had been shining and devoted his energies to straightening the Old Man out on a few points. "Matter of fack, sir, I seen it all!" His face took on the smug expression of The Man in the Know.

Skip set the hook. He made a disparaging sound deep in his throat and taunted Gavin with, "Hah! A likely story. I bet you don't even know how it started."

Gavin put his hands on his knees and leaned forward, stung to the quick. "Oh, *don't* I? I seen it from the very beginning. See, there was a bunch of us guys up here after chow, restin and battin the fat, and Comstock come up to tell Vitrano somepn about a detail he was on for the afternoon. Vitrano—he ain't like the rest of us, Lieutenant. He is somewhat of a loudmouth." Gavin eased the ash off his cigarette with self-righteous care and added graciously, "Maybe he ain't got orrintated yet. He may shape up. Anyways, Sal—Vitrano, that is. His name's Salvatore. Sal, him bein a loudmouth like I said, smarted off in Eyetalian just as Comstock was leavin. It sounded real bad, sir, like." Gavin rolled his eyes trying to capture the exact flavor of the comment. "Like, 'Oh go soak your head,' or, 'your mother uses cosmoline cold cream.' Somepn like that."

Skip nodded his appreciation of Gavin's delicate translation, and the *raconteur* continued.

"Well, sir, you shoulda seen our eyes pop out when Sergeant Comstock whirled around and lit into ole Vitrano in Eyetalian, right *back.*" Gavin shook his head in admiration. "Man, that guy can sure handle the langwidge. And *fast!* Sounded like he was usin a quad-fifty. Vitrano was so surprised he pret' near fell offn the bunk. His mouth just hung open. And the rest of us guys got to laughin fit to kill. That's what made Sal mad. Course," he added judiciously, "it don't take much to get Sal mad, anyways."

Gavin's eyes took on the compelling glare of the Ancient Mariner as he relived the excitement. "Sal come up offn his bunk and flang open his footlocker and brought out a switchblade as long as your arm. He swished it open," Gavin made the swishing motion and jabbed the lighted end of his cigarette toward Skip, "and started walkin spraddle legged to where Comstock was at."

"Why didn't someone stop him?" Skip asked.

Gabby was amazed. "You kiddin, sir? There ain't nobody in this outfit stupid enough to get in Sal Vitrano's way when he's got a blade out. Except Comstock, that is. And *he* just stood there waiting for Sal to move in, sorta grinnin to hisself like he dint think Vitrano was serious. Well, sir, ole Sal jumped at him and ripped him a good one on the arm. Comstock was rollin with the punch, or he woulda had it right then." Gavin shrugged helplessly. "I don't know eggsackly what happened next, it come so fast. I could tell by Comstock's face that he had his dandruff up, and when Sal come at him the second time, that sergeant moved like a snake. He did somepn to Sal's arm and made him drop the knife, and then rickashawed him offn that post there, and when he bounced back, Comstock judo-chopped him on the neck about six times. It sure tramquilized ole loudmouth."

"*Tram*quilized him?" Skip marveled at Gavin's command of the English language.

Gabby nodded. "Yes, sir! Like a heavy dose of Pheno-Barbasol. It ended the counterversy right sudden." He ground out his cigarette and belatedly realized that he had talked his face off. "I—ah—I hope there won't be no ree-curpussions about my tellin you all this, Lieutenant," he said

worriedly, "Comstock made us guys promise to keep our mouths shut."

Skip nodded grimly. "That is what I figured. No, Gavin, there won't be any repercussions." He stood up and mentally closed the creel. The fish was landed. "Well," he sighed, looking around the barracks, "I'd better go tell Mrs. Comstock."

MRS. COMSTOCK took the news of her husband's "accident" with fatalistic calm. "I knew something bad would happen at this post," she said. "Nothing has gone right for us ever since Roy came back in. He used to be G3 here at Maxwell, and we didn't want to come back. Nobody cared what we wanted." Her deep set eyes showed evidence of recent weeping. Her face was drawn and bloodless. "We lost our son in Korea, Lieutenant. Our only child. Seems like that should have been enough unhappiness. But it wasn't. Roy got riffed, and then we were sent to the one post in the country we didn't want. It's so horribly lonely I could just die."

Skip felt as if he were in the presence of death. Then it occurred to him that he actually was. This woman was slowly dying of ingrown bitterness and sorrow and mangled pride. As at a funeral, he sought for words that would comfort. "Maybe if you came out to camp once in a while and got acquainted with some of the other NCO wives, you wouldn't be so lonely."

Mrs. Comstock disposed of that suggestion with a decided shake of the head. "I would not set foot on that post if my life depended on it. I might meet some of the girls I used to be friends with. Roy was an officer, you know," she added proudly. Glancing around the painfully neat trailer, she sighed and added, "I just stay here and try to make a good home for my husband. That's all I have left."

She lapsed into silence so profound that Skip had the eerie sensation she had left her body and was floating out in space. He stood up. "Well, I must get back to camp. Is there anything you need?"

She smiled wanly. "That's kind of you, Lieutenant, but I don't need anything. I guess we're too old and useless to need anything any more."

Skip closed the door behind him and blinked in the bright afternoon glare. How, he asked himself, can there be so much sunlight outdoors, and so much gloom in that trailer?

When he entered his office, Murphy was waiting for him.

"Lieutenant, I hope you don't mind, but I let Barlow have a three-day pass."

"No, it's OK. How come he wanted a pass?"

"Seems like his wife has been puny ever since the baby was borned. Now she's got the flu or somethin, and the baby is colicky, and Barlow is fit to be tied. You know how crazy he is about his wife and kid. He wanted time off so's he can take care of the young un and do the wash and stuff like that while Inalee gets some rest."

Skip massaged the back of his neck. "I'm sorry to hear about the family being sick. Those are two nice kids. I'd like you to keep checking on them, Murphy, and if there's anything we can do to help, let me know."

Murphy closed the door softly behind him and Skip mulled over the events of the day. The look in Mrs. Comstock's eyes disturbed him. If she didn't find something to occupy her mind before long, reality would become nothing more than a blur. He paced back and forth, rubbing his neck. What was it Comstock had said about getting her interested in just one thing besides herself? Long forgotten words of an Emily Dickinson poem winged their way across the years from a high school English class. *If I can stop one heart*

Sergeant Comstock's wife quickly offered to take care of Private Barlow's sick wife and child

from breaking, /I shall not live in vain; /If I can ease one life the aching—

He stopped short. Of course!

DIANE COMSTOCK was surprised to see him. "I didn't expect you back so soon, Lieutenant. Is—is Roy worse?"

"No, Mrs. Comstock. This has nothing to do with your husband. It's a problem that just came up in the company and I don't know what to do about it. I was hoping you could give me some advice."

A gleam of interest came to life in the hollow eyes as Skip outlined the Barlow situation and finished by saying, "I don't think that a three-day pass is going to help matters much. Barlow

can do the washing and clean things up a little, but you know how men are about housework. Seems to me Inalee ought to have a woman to help." He let this sink in. "Only I don't know anyone I could ask."

Mrs. Comstock nodded absently. "You say that this child is only eighteen?"

Skip nodded. "They're both just kids. And they are so proud of that baby and are trying so hard to get along, it's a shame this had to happen to them." He waited a moment. "Do you have any suggestions about how I can help these youngsters? Frankly, I don't know what to do."

Her eyes focused on him as if he had suddenly begun speaking Swahili. "Do? There is only one thing *to* do. And *I* am going to do it." She stood up abruptly. "Would you mind driving me to the Barlow trailer, Lieutenant?"

SKIP and the First were enjoying their coffee and sampling the cooks' latest pastry triumph.

"Sure and begorra, 'tis a beautiful day, Sargint, me lad," Skip declared in ersatz brogue. "Matter of fact, there have been several beautiful days of late." He took a huge bite of coffee cake. "Umm. Good. Mrs. Comstock has taken complete charge of *Chez* Barlow, and Wally and Inalee think she's the most wonderful thing since Florence Nightingale, and—"

"And here comes *Mr.* Nightingale," Murphy interrupted.

Sergeant Comstock approached their table and sat down. His face was wreathed in smiles. "Lieutenant, you are looking at one of the happiest guys in Texas. Diane is like her old self, now that she's got somebody to fuss over." He beamed at the lieutenant. "I sure got to hand it to you, sir. It was the best thing that ever happened to her."

"Don't thank me," Skip said reasonably, "thank the Barlows. They could charm a bird off a tree. By the way, where's the poor man's Jim Bowie?"

Comstock poured himself a cup of coffee. "He'll be out of the hospital in two or three days, Lieutenant. I—ah—I want to talk to you about him." He took a tentative sip of coffee. "I suppose you found out what happened in the barracks."

Skip nodded. "Yep, and I still think you got rocks in your head. That kid was warned about fighting. He didn't pay any attention. Do you realize he could have killed you with that knife?"

Comstock wrapped his hands around the mug. "Lieutenant, Vitrano was born in Hell's Kitchen. His mother died when he was ready for high school. He had to quit school and go to work, helping his father support the rest of the kids. Sal never had any real affection from either parent. They were too busy trying to make ends meet. He really didn't have a childhood. All he knew was the city streets, and he got messed up. I admit he's no Eagle Scout, sir, but there's good in that lad."

Skip snorted into his coffee. "You sound like a soap opera, Roy boy. There are lots of kids who get a dirty deal from life, but they don't all turn out to be hoods. What makes Vitrano so special, anyway? Why this big interest in him? We got other guys that can use some help if you're going to devote your time to social uplift."

Comstock reached for the cake. "Lieutenant, all I want to do with Vitrano is help him. I'm not a social worker." He munched the cake. "You see, sir, I sort of got this idea from a man I respect—a man who has made a name for himself in reclaiming lost sheep."

"I'm sure that Father Flanagan would be proud to hear you say that."

Comstock took another bite. "Not Father Flanagan, sir. An Army officer who turned a bunch of eight-balls into a fine trucking outfit."

Murphy gave a subterranean chuckle at Skip's red face. "Comstock sure roornt your argument, sir."

Skip was pleased, embarrassed and irritated in turn. The broad grins of his two companions did little to restore his equilibrium. Finally he grunted, "That was different."

"Only in the number of men involved, my dear sir." Comstock stirred his coffee. "The reason I am interested in Vitrano, Lieutenant," he spoke to the cup, "is that he reminds me of the boy we lost in Korea. Roy had dark hair, and Sal's eyes are sort of broody like Roy's. Diane feels as I do," he continued in muted tones. "We think we could help him and he could give us something to work for. On the way to the hospital he let his guard down. He's just a scared kid, trying to be grown up the only way the city taught him. That's why I didn't want you to start any investigation. I had an in with the boy and wanted to see if I could figure out what makes him tick." He licked his fingers. "Sal's a good kid at heart, sir. I'm convinced that beneath that cocky front there is a heart of gold."

Skip poured more coffee. "And you intend to mine it."

Comstock grinned at his CO. "Yes, sir, I sure do. The way I see it, nobody's got a better chance of hitting pay dirt than a guy with the name of Comstock."

Skip laughed. "You have a point there. All right, little follower of my muddy footprints, have at it." He raised his mug of coffee. "And as my old Japanese friend Murphy would say, 'rots o' ruck.' "

They drank to the success of the new Comstock Lode.

Were there worthwhile targets for atomic weapons in Korea? After ten years the question is still debated. Here is a pro view.

Col. WILLIAM R. KINTNER

ATOMIC DILEMMA

PRIOR to the Korean conflict the United States had developed its entire military policy around the concept of atomic deterrent. As a reflection of this policy, in June 1950 there was in the United States Air Force not a single tactical air group for support of land combat. Despite our commitment to nuclear warfare, the atomic bomb was not used.

Let us look back with the benefit of ten years of hindsight to see, first, why it was not used; secondly, whether it might have or should have been used; and finally, to examine the lessons that can be drawn regarding possible atomic conflict in the future.

It seems obvious that nuclear weapons could not have been employed during the initial phases of the Korean war. Our involvement was so unexpected, and our commitment of units so staggered, that U. S. forces could not cause the development of lucrative military targets against which a nuclear blow could have been efficiently directed. Likewise, after the successful landings at Inchon and the autumn drive to the Yalu, there seemed to be no necessity of playing an ace-in-the-hole to defeat an enemy whose military disintegration was visibly taking place.

There were only two occasions when an atomic bomb might usefully have been employed. The first was in connection with the Chinese Communist intervention in December 1950. A nuclear blast might have blocked the unexpectedly large forces which the Chinese had committed into battle. The second possible time was after the frustrating armistice talks had enabled the Chinese and North Koreans to build a prepared defensive position across Korea. Atomic strikes might have been used to break through the Communist defense lines to bring about a political settlement in keeping with the goal of the United Nations for a united Korea.

December 1950 may eventually go down in history as one of the turning points of the Cold War. General MacArthur regarded the Chinese intervention as creating an entirely new war. The U. S. Eighth Army, encountering surprisingly large Chinese forces, was forced to withdraw.

Mr. Truman, presumably acting on the advice of the Joint Chiefs of Staff, indicated that the United States might consider using the atomic bomb if necessary, to check what appeared to be the makings of a complete military rout. Hardly had the President hinted at this possibility than pressure was applied upon us by our European allies, particularly the British, to forego the use of atomic weapons in any circumstances. British Prime Minister Clement Attlee flew to Washington and apparently used all his persuasive powers to convince us that we would not use the A-bomb.

No Doctrine Developed

Let us review the argument as to why nuclear weapons were not employed at that time, bearing in mind the political and psychological pressures applied on the United States and its military leaders to forestall its use. In retrospect, the U. S. in 1950 had a very limited atomic stockpile. It was only in 1949 that techniques were perfected for the accelerated production of nuclear material. These techniques led to the creation of the stockpile which subsequently was developed by the United States and later by the Soviet Union. What few weapons we had were earmarked almost exclusively for use by the Strategic Air Command. The development of tactical atomic weapons had hardly begun, small-bomb technology did not exist, and delivery means for tactical employment had not been developed. Further, at that time we had not developed a doctrine for the employment of atomic weapons in battle against aggressor armies. In the public mind, there was no distinction between the possible use of atomic weapons as city-busters and their more limited use on the tactical battlefield.

As an added factor, in 1950 NATO Europe was largely defenseless against the Red Army massed on the eastern side of the Iron Curtain. It was argued that if we used atomic strikes in Korea, the Soviet Union would support its North Korean and Chinese Communist allies by launching an offensive against Western Europe. Many thought we could not check a Soviet Army offensive in Europe regardless of whether or not we employed

what nuclear weapons we then possessed against the Soviet source of power.

Perhaps the major bar against the use of atomic weapons in any form was the fact that Americans and Europeans had been conditioned by years of horror stories against any use of atomic weapons in any conflict. Much of this conditioning, of course, could be traced to the Kremlin's propaganda mill. During the late forties and early fifties the American people were systematically influenced against using the chief power they possessed. There were some American scientists, both political and physical, who took the lead in portraying the unimaginable horrors of any nuclear war. None of this type of atomic discussion was permitted inside the Soviet Union. Consequently, although the USSR was doing everything it could to acquire its own atomic (and eventually thermonuclear) weapons, while retaining superiority in conventional means of warfare, it was promoting a major psychological campaign in the West against any U. S. use of these weapons. This adroit campaign helped prevent us from using the atomic power we had at our disposal. The Soviets knew that if the use of nuclear weapons could be blocked by their promotion of moral inhibitions, the spearhead of the West's technological superiority over the Soviet Union could be blunted if not destroyed. Mao Tse-tung has characterized Communist warfare by saying, "Politics is war without bloodshed, and war is politics with bloodshed." The Soviets minimized the possibility of Communist bloodshed in Korea by political warfare which made it highly unlikely that we would use the very weapons upon which our military planning had been so largely based.

Would the Area of War be Extended?

Also widespread was the belief that the employment of nuclear weapons in Korea was tantamount to extension of the war outside the periphery of the peninsula. A commonly accepted fallacy of the time was the contention that any U. S. extension of the conflict outside of the Korean peninsula would automatically result in a third world war. Taken together, these two beliefs equated atomic weapons in Korea with an inevitable global war. Not everyone agreed with this equation. General MacArthur was relieved from command because, among other things, he believed the Communists could not be provoked by us into major military retaliation unless they themselves were ready and willing to initiate a global war. Presumably they had some means at their disposal, had they wanted to use them, to attack Pusan when it was a compressed bridgehead of Allied forces. Likewise, they might have attacked the Japanese base, which, had we been prevented from using, would have made our fighting in Korea almost impossible. Their restraint inferred their unwillingness in the face of our atomic edge to broaden the conflict which they had started. Consequently, had we used nuclear weapons only against troops, it is questionable whether their employment would have widened the area of war.

During the 1953 hearings it became evident that General MacArthur had only a very general appreciation of the U. S. nuclear stockpile in relation to that of the Soviet Union. According to his own testimony, although he had asked the Joint Chiefs of Staff if there were any plans for using the A-bomb in the Far East, he never recommended its use. Nevertheless, General MacArthur made it quite clear that he did not believe the Communist leaders would ever be provoked into any action which they themselves did not wish to take. With specific reference to Soviet nuclear action, he said, "I don't believe for a minute, from my general knowledge of the situation, that the enemy has the potential or the inclination to use his limited atomic weapons in such an area as Korea or China."

Some argue that by 1950 the Soviet Union had already acquired the beginnings of a respectable nuclear stockpile. The Soviets also had by 1950 a long-range air force capable of launching some one-way strikes directly upon the United States. This embryonic long-range air force, which had only recently been created, was not fully trained and tested. Whether or not it could have delivered upon the United States the meager atomic stockpile then at the disposal of the Soviet Union is very much open to question. Nevertheless, this possibility was considered in Washington in 1950, and as the Korean conflict dragged on it became an increasingly important one.

Feasibility of a Nuclear Strike

For the moment let us lay aside the question of why atomic weapons were not used, and consider the feasibility of their employment. In other words, suppose we had employed nuclear weapons in strictly tactical roles against the massed Chinese armies on the battlefield. While we would not have been extending the geographical boundaries of the conflict, we would have increased military violence within its boundaries. By so doing, could we have seized the initiative from the enemy instead of waiting to counter his moves? Could we have paid him off in coin of his own kind?

To begin with, as soon as we became aware that the Chinese were present in large numbers, we might have issued them a stern warning to withdraw or face atomic retribution. The Chinese, aware of Hiroshima, should have understood the weight of the nuclear club we held. But suppose

Soviet pressure on both the Chinese and the North Koreans would have led them to consider our warning a bluff? Then we would have faced the reality of choosing targets for feasible military attack. In almost every assault by Chinese Communists (after their intervention, the Chinese became the principal element of the armies opposing us), the Communist forces prior to an attack concentrated in clearly defined assembly areas. For example, when they were preparing to cross the Han River they could have been dealt a series of devastating blows. While we may not have destroyed whole Communist armies, we would have decimated regiments, perhaps divisions.

Whenever the Chinese were on the offensive against us, the Korean terrain favored the use of atomic blows. There are only a few clearly defined north-south corridors of attack in Korea. The Chinese Communists could not sustain an attack without moving their forces, and also their back-up supplies and equipment, through these corridors. Bottlenecks in these corridors offered ideal targets for small atomic weapons. Atomic interdiction was not only feasible in Korea, but it could have been highly productive. By using nuclear weapons against a few chosen locations far away from any Korean towns, main avenues of attack could have been blocked. They could not have been by-passed without the expenditure of a great deal of time and labor, particularly since lateral east-west road networks rarely existed. In short, road and highway interdiction, plus direct attack on massed troop formations, could have reduced the Red manpower preponderance to manageable size.

Air Force interdiction with conventional bombs played an important role throughout the Korean conflict. But with the weapons available the Air Force was unable to interfere seriously with either Communist concentration or resupply. An atomic bombardment of the same targets would have exceeded high-explosive bombing beyond comparison.

Again, with atomic weapons massed like any other decisive arms, we could have, had we wanted to, blown our way through the defensive position created by the Chinese and North Koreans while the truce talks were going on at Panmunjom. With these weapons we could have achieved decisive concentration of firepower to break the crust of resistance. Our efforts would have been enhanced by the element of surprise. The Communist forces in Korea would have been badly shattered, at least until they had learned through costly experience about atomic weapons in land combat. They would have remained at a decisive disadvantage unless their masters in the Kremlin sent them a few atomic weapons of their own. In view of the fact that the Kremlin has never shared any of its nuclear weapons with its allies, it is very doubtful if this would have happened.

But had the Chinese Communists been given a few atomic weapons, and chosen to use them, Pusan and a few other port areas would have been logical targets. Had they accepted the risk of using A-bombs against towns after we limited their use to tactical situations on the land battle front, they would have had to accept the risk of our greater retaliation. This brings the argument around the circle. In the face of the total U. S. superiority in nuclear power and in long-range delivery systems which existed all through the conflict, would the Communists have risked extending the combat area? I, for one, believe they would have been most reluctant to do so.

Implications of our Failure

Our failure to use nuclear weapons in Korea made it practically impossible for the French to employ them at Dien Bien Phu (assuming the U. S. would have given them to the French) at the tail end of the Indochina war. Thus, the mental block against using atomic weapons, already strong in 1950, was reinforced by the Korean war embargo. The experience of Korea has left a deep-seated phobia in the minds of many Americans against limited conflicts of any kind, regardless of the type of weapons employed. The U. S. policy of 1954 of coping with Communist aggression by massive retaliation in times and places of our own choosing, was a psychological reaction against the frustrations encountered in trying to conduct a limited conflict against Communist forces with conventional means. The gains the United States might have derived from the tactical employment of atomic weapons are, of course, gone with the wind. A basic problem remains: How can the United States use its nuclear arsenal both to deter general war and to block limited aggression?

In spite of all the changes that have taken place in the Kremlin, the Sino-Soviet bloc still enjoys the great advantage of a preponderance of trained, well-equipped, army divisions. The Soviet Army is capable of employing nuclear weapons in land combat.

We are now at a stage when both sides in a world-wide protracted conflict possess nuclear stockpiles and delivery means for tactical and strategic employment. This situation has thickened the fog and uncertainty of war. Nevertheless the specter of nuclear conflict will remain unless an East-West ironclad disarmament agreement is reached. Perhaps we could now deal more confidently with this specter had we played our nuclear cards differently during the Korean war.

It's here, so why not use it to best advantage?

Battle Group Aviation Team

CAPTAINS HENRY G. MOSELEY and R. G. STEUART

IT'S time we got down to the serious business of realistic tactical employment of the much discussed union of Army aviation and the ground fighter. We cannot afford to let our modest but potent aviation program go to waste. Our infantry and airborne division battle groups have at their disposal air support comparable to, if not better than, their Soviet counterparts. The commander who fails to employ this weapon competently will always be at a serious disadvantage on the battlefield.

Let it be clear from the outset that our battle group commanders are interested in much more than the uses of helicopters for troop moves, or aerial observation, or command liaison.

We propose to show how one battle group, not satisfied with mere taxicab support for its commander, used all the aviation it had available. We will trace the steps taken to develop this capability by the 2d Airborne Battle Group, 503d Infantry (The Rock), of the 82d Airborne Division. We shall see how first it created the organization for employing sizable numbers of aircraft, and then how the staff went about the task of planning for aviation support. Next, how the battle group trained to capitalize on this support, and then went back and worked out not only how it would face up to the limiting factors of weather and aircraft vulnerability, but how it would assure itself that available aircraft would earn their keep.

Although we employed these aircraft in many differing roles, we cite only three uses in some detail: the helicopter in logistical support, as an

airborne CP, and for air-displacing a 4.2-inch mortar platoon.

Our approach was to request aircraft support for the battle group that would fit anticipated tactical conditions. Normally we augmented the lone H-13 of the combat support flight by one or more additional H-13s for staff and small-unit commanders, a utility helicopter (HU-1A) in the command support role, and another for logistical missions. Two L-19s are also desirable when the battle group fights independently of the rest of the division.

To be properly prepared for our pathfinder tasks of handling these aircraft, we organized and equipped a small pathfinder team to work continuously on three separate landing zones.

Because of the reduced strength of the airborne division's aviation company, it was necessary to add one pilot to the combat support flight section. This released the flight leader from primary flying chores and permitted him to conduct current and plan future operations.

Staff planning

In planning for aircraft in support of tactical missions, the battle group commander, while adhering to safe flying practices, must insist on maximum utilization within established standards.

The flight leader of the combat support is the battle group commander's advisor on ways and means of obtaining the greatest use from his aircraft. In addition to this role as advisor, the flight leader must assist in training subordinate units. He informs these leaders and the battle group staff of those phases of training that should be stressed.

S1 found that he could make a detailed air and ground reconnaissance of proposed command post locations from the utility or light reconnaissance helicopter. Also, he could take along some of his quartering party and even drop guides along the route. He could do these things and still have time for his other personnel functions.

The battle group's intelligence officer found that one of his greatest sources of tactical information were aircraft on observation or surveillance missions.

In all staff planning, S3 began figuring on tactical troop movement and insisted that the group keep itself ready to use cargo helicopters should they become available.

S4, with the Supply and Transportation (S&T) Platoon leader, developed the use of the one utility helicopter assigned him. Had a critical bridge or road net been lost under tactical conditions, this use would have become imperative.

In planning the employment of aircraft and considering their logistical support and the conditions for the crews, we found a flexible policy worked best. In practice we leaned towards decentralization whenever possible. When commanders of subordinate units and battle group staffs are trained to recognize all of the advantages, limitations and difficulties, they can be trusted to use aircraft continuously, productively, and safely, and under little supervision.

Training for airlift operations

Even with staff interest aroused, we still faced the formidable task of training small units and battle groups. If we were to conduct frequent airlifted tactical moves, the entire battle group had to maintain an extremely high state of individual and unit training.

In addition to conventional sling loading, message drop, pickup, and similar operations, such skills as pathfinder techniques, preparation of bulk load pallets, and detailed small-unit air mobility skills were found necessary.

A modest program for the battle groups which accomplished all our training objectives included (the figures represent hours): familiarization with aircraft (4), aeromedical evacuation (1), day and night sling loading (8), planning helicopterborne operations, for leaders only (2), con-

Gun crew watches as helicopter brings in fresh supply of gasoline.

duct of helicopterborne operations (4), day and night landing zone operations (4), cargo aircraft internal loads (1), small-unit airmobility training (4).

During field work this training was supplemented by practical helicopterborne operations integrated into all unit training.

Because proficiency always must be maintained, we tried to conduct this training quarterly. When losses occurred we held a familiarization course to bring new commanders up to date. Also, distribution of written matter from time to time helped keep the battle group abreast of developments.

Initially some unit commanders and staff members of the battle group had a you'll-have-to-show-me attitude towards planning for Army aviation support. Each unit had a different training situation. Some had had favorable experience with troop lift while others at some time or another had been landed in the wrong direction or at the wrong place. However, after thorough training and a few small-unit moves, air movement acquired its firmest supporters.

Vulnerabilities of Army Aviation

Doubting Thomases are quick to cite that capricious and limiting factor—weather. Although technological advances make flying safer during marginal weather, certain aspects restrict aircraft employment. Meteorological records for Fort Bragg (a region plagued by its share of poor flying conditions) reveal that on an average, weather conditions prevent helicopter operations only one and a half hours a day, or less than two days a month. During field training, we found it desirable to keep our aircraft where they would not be tied to the ground near airports, by arbitrary restrictions imposed by regulations. By keeping them with the using unit, we closely approximated the combat availability rate. Delays in availability of aircraft due to weather were few. Usually such delays did not preclude our employment of planned tactical support during field operations.

Another factor that limits the use of aircraft near the enemy is their supposed vulnerability to ground fire and aerial attack. Although for safety reasons aircraft remain higher than 150 feet during training, in combat they fly at tree-top level. Exceptions, of course, are made for missions requiring higher altitudes, such as artillery adjustment. Because their path is not restricted to easily followed roads, low-flying aircraft are less vulnerable to aerial attack than ground vehicles. Flight also acts as protection against ground fire. During flight aircraft are also vulnerable to the devastating effects of nuclear fires, and staff planning must visualize this possibility.

We profited greatly from the use of the utility helicopter in logistical support of the group. Today's fluid, expanded battlefield demands more flexible and more immediate delivery of critical supplies and equipment. The Supply and Transportation Platoon may be unable to meet all conditions, especially where limited road networks become impassable during bad weather. We found that our logistical helicopter could handle the transportation job of virtually the entire platoon. The current S&T Platoon of the airborne battle group has seven 2½-ton trucks, five 1½-ton trailers, and eleven ¾-ton trucks. (The 2½-ton trucks and trailers are tied up with unit messes for extended periods.) During any one combat day, the eleven ¾-ton trucks average probably 450 miles, with the platoon averaging three-quarters of a ton for a total of 340 ton-miles. Each HU-1A can easily do 500 ton-miles daily, with almost instantaneous hookup and discharge of external loads.

Proper employment of helicopters requires planning and preparation. Pathfinders allow night operations as a matter of course. A pair of pathfinder teams can rapidly set up terminal guidance at the supply control point (SCP) area and near our forward units (from six to eight miles). Pathfinders allow around-the-clock delivery of supplies over terrain barriers which prohibit movement of wheeled vehicles at night. Loads were kept ready for instant pickup during field operations.

The leader of the S&T Platoon maintained a large stock of A-21 aerial delivery containers and nets at his logistical base, and a high percentage of his supplies were rigged, even during ground movement. This practice was used from the marshalling stage onward. At the DZ and LZ, where the battle group was delivered by the Air Force, the various cargos were unloaded or heavy-dropped in slings, nets, or containers. These were already rigged so that the utility helicopter could pick up the load where it lay and deliver directly to the using unit. No handling of bulk supplies was necessary from drop zone to using unit. Many of these bundles were cross-loaded, so that in one sling a rifle company could get a portion of its daily requirements in all calibers of ammunition.

The Army, and particularly STRAC, needs an airtransportable utility helicopter which can be ready to fly within one hour after it is delivered at the airhead by assault transport. Concurrently, we must develop a standardized roll-off pallet for heavy drop and air landing. Such a system will afford almost immediate clearance of the DZ or the LZ along with simultaneous delivery to the user, all with equipment delivered by the Air Force strategically into the airhead. We can do this, and we have done it, with the difference that

our utility copter had to be flown into the airhead. This procedure is risky during tactical operations and impossible when ranges exceed 200 miles.

An airborne CP

One thing for which tactical commanders yearn is an airborne command post for effective, mobile, and continuous operations. So far, we have no suitable vehicle, though with some adaptations the HU-1A serves the purpose. Properly equipped for both day and night combat, the HU-1A command post allows the commander to move about with key staff members to any critical area, while conferring en route.

Although we developed an interior arrangement which for us was entirely suitable and involved no modification of the aircraft, Army-wide interest in this concept should spur development of such standard equipment for the battle group commander. In our command post we removed facing seats in the rear and installed a wide pedestal upon which we mounted all necessary equipment. The pedestal, securely anchored to the floor tiedown fittings, includes mapboard, writing surface, drawers, and containers for office supplies as well as two additional receiver-transmitters with earphones and handsets. With these additional FM channels, the staff can communicate within the nets of division, battle group, artillery FDC, or intelligence. Wire antennas for these two additional radios, fastened to the HU-1A cross tubes, proved completely satisfactory. Our arrangement used two PRC-35 radios, but PRC-10 sets can reach from the air any ground station within 15 miles.

There are seats for five passengers and although these are easily removed or installed in 10 minutes, usually the pedestal is left in place since it does not significantly hinder operating capabilities.

During actual operations, this battle group utilized an alternate CP and an alternate or task force command group. This practice favors the use of an aerial CP. The battle group commander, or his deputy, having decided that the aerial command post is convenient and necessary, notifies his staff and appoints a time to assemble at the aircraft. Maps are brought up to date and the pilot prepares for flight. Once in the air, the staff carries on its normal functions. Conversation can be held in only slightly higher than normal voice.

When visiting his front-line units, the battle group commander can confer with each subordinate leader. The blackout curtains allow this planning and coordination at night. Extended night work on the ground is made possible by the Little Joe generator. When conditions warrant, the aircraft can be used as a small tactical CP on the ground in forward areas over prolonged periods with light, heat, radio communications, and protection from the elements.

Rapid and extensive displacement of the 4.2-inch mortar firing section was accomplished by sling loads. The external sling load is favored over internal loading, because it permits preparation prior to the helicopter's arrival and subsequently allows immediate pickup as well as delivery without landing. Sling loading of a firing platoon attached for task force type missions proved effective for relatively short displacements of 5,000 meters as well as moves over greater distances.

Displacement pays off

Although considerable practice was necessary for smooth operation, the value of this aerial displacement was proved when a simulated Aggressor atomic strike resulted in a contaminated area across our front and precluded vehicular displacement.

Once the order to displace was received and the information from the radiological monitoring teams indicated that an airborne move was required, the mortar platoon immediately readied itself. The air gear, nets and clevices are always carried in the section's ¾-ton trucks.

When the cargo helicopters arrived, the mortar crew and their loads were ready to be airlifted. Two cargo helicopters can accommodate the mortar, a 10-man firing section, and 72 rounds. Within 10 minutes after the tubes had been landed, they were laid and ready to fire a mission at a point some 4,000 meters to the front. All sections of our mortar battery maintained this readiness.

Many other applications

Though we have been able to touch on only a few, there are many other applications for Army aviation. Such missions as aerial message-center runs to distant units, adjustment by night of artillery fires on an enemy showing lights, and many others, helped our battle group close with, destroy, or capture the enemy. Other applications will arise as we progress technologically into such fields as VTOL and STOL aircraft, aircraft armament, increased all-weather capability, and simpler aircraft which can be easily maintained by units.

With the aircraft and the units currently available and by combining hard work and imagination, we forged a closely knit ground force aviation team. This partnership created the atmosphere wherein the myriad capabilities of Army aviation could find outlet, and wherein the entire battle group could capitalize.

Why don't you try it?

Communications satellites hold out the promise of giving commanders reliable and instantaneous communications with globally-deployed forces

Maj. PATRICK W. POWERS

LOUD and CLEAR

Two years ago an unusual message was sent from 400 miles above the earth: "This is the President of the United States speaking. Through the marvels of scientific advance, my voice is coming to you from a satellite circling in outer space . . ." That was project SCORE (Signal Communication by Orbiting Relay Experiment) which consisted of an ATLAS missile launched into orbit with a tape-recorded message broadcast to several ground stations. On 13 August of this year, a two-way radio conversation was held using still another type of satellite, an ECHO balloon, this time at an altitude of 1000 miles. In somewhat less majestic language a two-way conversation was relayed from New Jersey to California and back: "Hello . . . are you reading me out there?" "Yes, we're reading you loud and clear . . ."

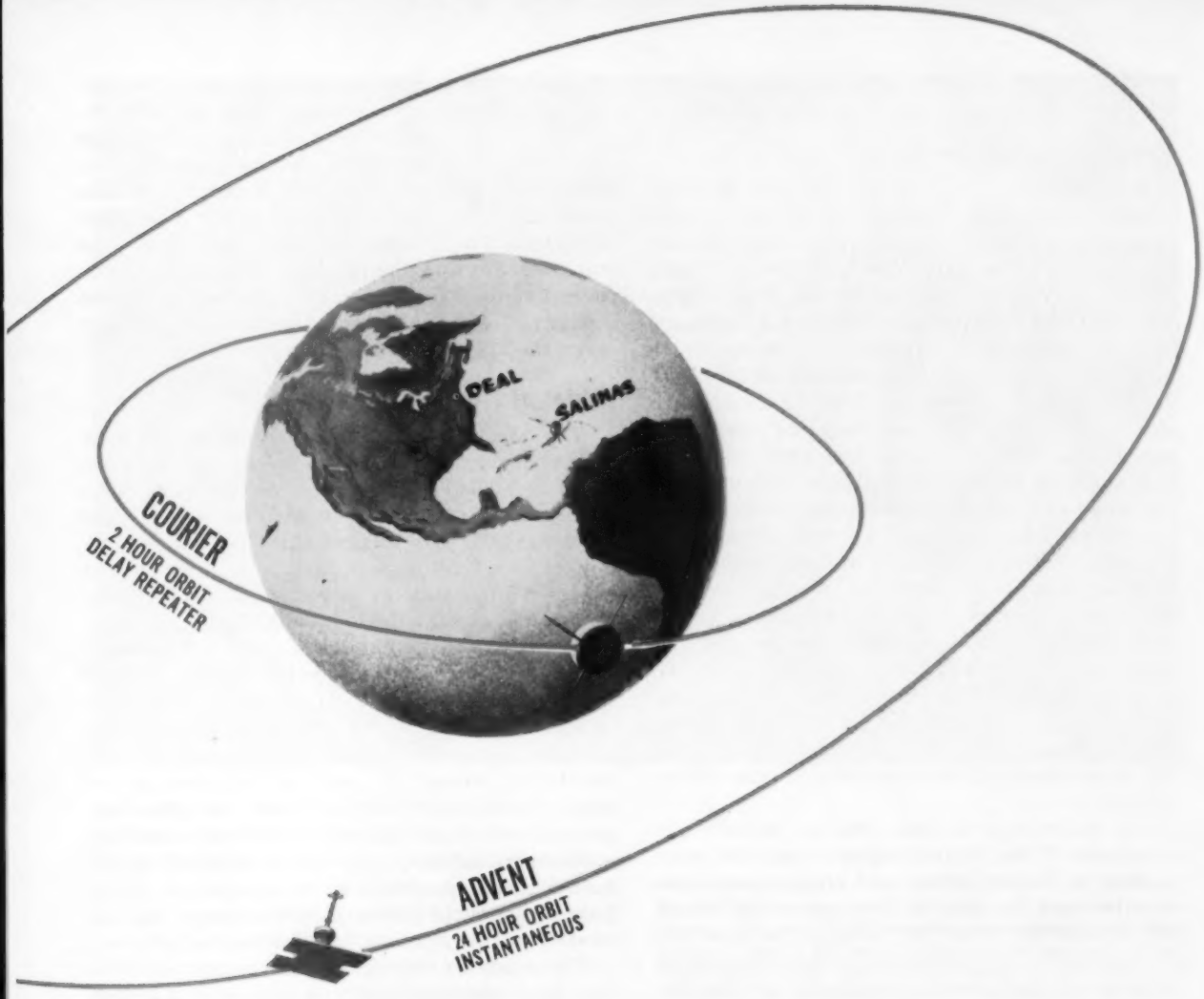
This latest spatial conversation was a bit more down to earth and so, too, are the future military implications of this potent, new method of communications. Space may harbor the secrets of the universe and the paths to the moon and the planets, but it also provides the environment for artificial earth satellites packed with communications equipment that will provide fighting, mobile, dispersed land forces their first reliable means of long range contact among theaters of operations and the Continental U. S.

Communication satellite projects

The growing number of national and international space projects has resulted in a rather confusing array of "first" and glowing pronouncements of great scientific achievements. Although most of these really amazing accomplishments are the first stages of rapidly maturing programs, the utility of communication satellites for military purposes is closer than most people imagine. What is also not realized, perhaps, are the important differences in the various satellite projects and which ones are best suited for Army communications.

First, let's examine briefly the basic nature of radio waves to better understand communication by satellites.

Fundamentally, radio waves travel in straight lines except when they are bent or reflected as a lens bends or a mirror reflects light waves. These electromagnetic waves have measurable length from 30,000 meters to one-tenth of a centimeter and frequencies (cycles per second) that vary inversely as the length. The ionosphere (some 100 miles from the surface of the earth) acts as a natural radio mirror and reflects the longer length (higher frequency) radio waves enabling communications to span continents and oceans. But the super high frequency or still shorter waves, such as microwaves (about 1000 or more times shorter than commercial broadcast band waves), go right on through the ionosphere. The use of microwaves overcomes the lower frequency radio wave disadvantages of ionospheric disturbances and intentional jamming. Thus, they are of particular interest to military communications. The problem facing military planners is to design a system where the usual transmitting tower is tall enough—hundreds or even thousands of miles high—to send and receive radio intelligence by microwaves over intercontinental distances. Since such a tower appears to be a rather stout engi-



The 650-nautical mile orbit of COURIER, a communications satellite developed by the Army Signal Corps and Philco's Western Development Laboratories, is shown in the photo above. At right, M/Sgt. Louis J. Maynard affixes a whip antennae to COURIER. At left, teletypewriter operators prepare messages for transmission to the orbiting satellite. In one five-minute pass over a ground station COURIER will be able to transmit and receive 340,000 words.

neering impossibility, an orbiting earth satellite used as a relay station is a logical substitute.

Active and passive satellite

Satellites come in well-publicized shapes, sizes, weights, and types. However, as communications relay stations, they divide neatly into the familiar passive and active categories. The recent NASA ECHO balloon is an example of the passive type. This 100 foot-diameter aluminized plastic balloon actually serves as an artificial target by which well-aimed radio waves are bounced off its useful spherical shape. However, from 12 to 50 such satellites in orbit are necessary for essentially continuous communication. The ECHO conversation reported earlier, for instance, lasted only a few minutes since the balloon was traveling over 15,000 miles per hour as it bored through the heavens resulting in a short, mutual line-of-sight time between the two stations. Another idea for a passive system is to put billions of tiny microwave reflectors, small dipoles about the size of a hair, into orbit around the earth to form an artificial ionosphere. The first of these schemes has serious drawbacks. The major objections to the ECHO system are the lifetime of the balloons and the requirement of very powerful ground transmitters.

The active type of relay station includes the categories of the delayed-repeater satellite, such as that of Project SCORE, and the instantaneous repeater such as that of Project ADVENT which will be described later. By being active repeaters these satellites receive transmissions from ground stations and re-transmit them back to other distant stations. Consequently, the power requirements of the ground stations are lower—permitting them to be semimobile in the field—and greater security measures for the transmissions are possible.

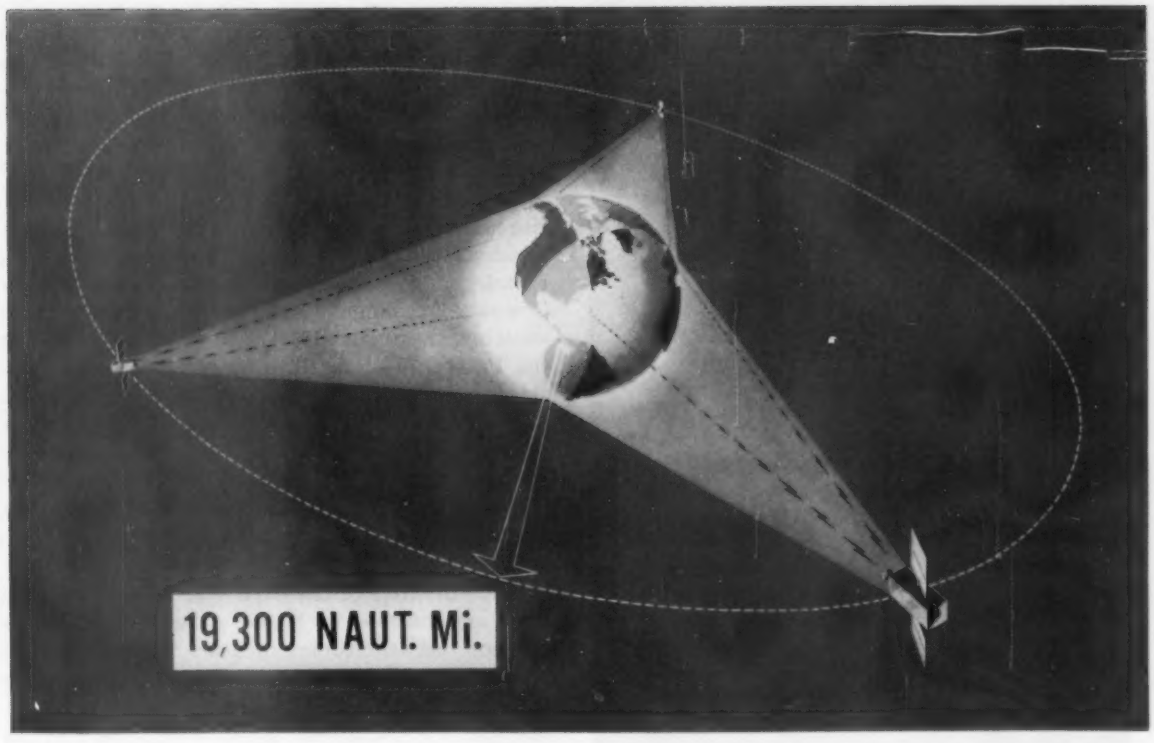
The first important system to be put through the research and development paces is the Army-developed COURIER, a delayed-repeater type of an active relay system. The first test in August of COURIER was unsuccessful because of a booster-rocket failure and a second experiment is scheduled in the near future. The designation of COURIER is descriptive of its operational scheme for it is truly a space-age messenger designed to travel at an altitude of about 650 nautical miles in an orbit calculated to make several passes a day over the transmitting and receiving stations at Salinas, Puerto Rico, and Fort Monmouth, New Jersey. As COURIER comes in view of the Salinas mobile ground station, the satellite's microwave transmitters and receivers are activated by command from the ground. During the five-minute "pass" period, information is sent to and received from the satellite. The information previously stored by the ground station is on magnetic tape in digital form which allows a tremendous number of messages to be sent in a burst fashion in an extremely short time. In one pass, for example, 340,000 words or the equivalent of the contents of the Sunday edition of the *New York Times* can be transmitted and received by the tape recorders in the satellite. That amounts to over 1,400 words per second—a far cry from the "wigwag" flags and the pigeons of the past and even the systems in operation now.

Series of satellites

The satellite communication system offering the most advantages would be one that stations a series of satellites in relatively fixed positions over points on the earth so that messages could be instantaneously relayed from a ground transmitter to a satellite and back to another ground receiver thousands of miles from the first station. How can this be done? By placing a satellite in an extremely high orbit with the necessary velocity to match the speed of rotation of the earth so the satellite would appear to be fixed in space when viewed from the earth. This is the so-called 24-hour satellite that completes one revolution around the earth in the same period that a point below it on the earth completes one revolution in space. As a result, such a satellite system dramatically provides a working substitute for radio towers and the ionosphere, which have seen such stalwart service since the invention of the wireless by Marconi in 1895.

The Army is making another major contribution to communications with just such a system through Project ADVENT, designed to position a microwave communications relay package 19,300 nautical miles above the earth in a 24-hour orbit. ADVENT has been described by some engineers as more complex than the development of ICBMs; its objective of determining the feasibility of this type of communication system will certainly have national and international significance, as well as direct military advantages. Such a space relay station will be an active repeater because teletype, telephone, TV or facsimile messages sent to the satellite will be instantaneously relayed to another station on land or at sea, as much as 8,000 miles from the originating station. Actually, this mode of operation is the same as used in present Army radio relay equipment where a radio set on top of a mountain or in an aircraft insures much greater and more reliable line-of-sight coverage during combat.

ADVENT has recently been transferred to the Army for development and a special project office has been established under the Chief Signal Officer with policy direction exercised by the Chief of Research and Development. The increased



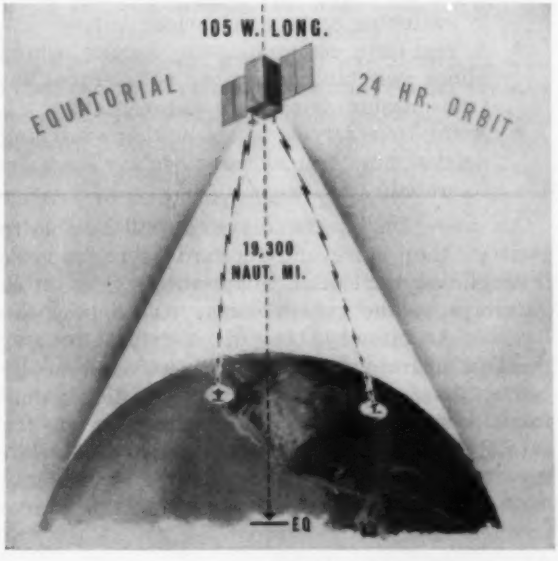
authority for control of R&D projects recently given to the Chief of Research and Development by the Secretary of the Army will insure complete Army R&D support of this important project which requires participation by the technical services as well as Air Force, Navy, Department of Defense and the National Aeronautics and Space Administration. Many test launchings are scheduled for the future although this project is not expected to go into an operational phase for several years.

Now in development by the Chief Signal Officer of the Army, the ADVENT communications satellite will be placed in extremely high orbit—19,300 nautical miles—where it will attain a velocity equal to the speed of rotation of the earth, will appear to be fixed in space, and will rotate about the earth once each 24 hours. The pictures above and below suggest the operational concept of the ADVENT system.

Getting the word

Passing the word *in time* has always been a great equalizer in war and the future requirement seems to be increasingly critical. We hope the days are gone when an Andrew Jackson fought the battle of New Orleans after the treaty ending the War of 1812 had been signed or a Jeb Stuart failed to influence the Battle of Gettysburg with his cavalry reconnaissance information because he had no rapid means of sending messages. On the other hand, General Patton directed the complex maneuver of shifting the bulk of the Third Army from the Saar to the Ardennes in less than a week almost entirely by telephone—a successful use of communications just 16 years old.

But what of tomorrow's communications requirements? Mobility and firepower have increased within the Army since World War II just as the requirement for strategic mobility of land forces has become a factor of national defense.



Obviously command and control of long-range mobile forces is now more critical and as a corollary long-distance communications are equally as critical. But, at the same time, serious limitations now exist in this type of military communications and this is where the technique of communication by satellites offers so much promise.

Intercontinental trunking

The initial operational use of COURIER and ADVENT, for example, will be for long-distance intercontinental trunking (the connecting of two distant communication exchanges) and for long-distance, ground-air-ground and shore-ship-shore communications. In these areas present military forces are largely dependent upon high-frequency, very-low-frequency, and ionospheric scatter radio communications with their inherent problems of unreliability, bandwidth limitations and distance limitations. Additional shortcomings are vulnerability to ionospheric disturbances that cause monthly radio "blackouts", high altitude nuclear effects, international jamming, and low information capacity. The use of microwave frequencies in the satellite systems described would virtually overcome these present disadvantages.

The satellite systems may be integrated into the Army's Universal Integrated Communications System known as UNICOM. This is a network designed to service the command, intelligence, and logistic/administrative needs of military forces. It extends from the President through the Secretary of Defense to the Joint Chiefs of Staff and then to the Unified and Specified Commands, who exercise direct command control over the operational military forces. UNICOM will be responsive to these fundamental types of communication needs:

- A store-and-forward type of service for messages and data which can tolerate a delay in switching and transmission;
- A real-time communication service where minor switching delays can be tolerated but transmission delays are unacceptable;
- A full-time service where neither switching delays nor transmission delays can be tolerated.

An operational COURIER system will be able to satisfy the store-and-forward type service through communication relay centers that act as gateways to the general areas where they are located. As gateways they will distribute COURIER messages throughout their respective areas by conventional means and act as collection points for bulk traffic destined for another area via the satellite. It has been determined that one orbiting COURIER satellite will be capable of handling most of the Army's bulk communication traffic through 1963.

Now how will ADVENT revolutionize our present and future networks? First of all, it will act as a trunking system to fulfill any of the three communication needs. Its principal advantage will be the capacity for handling real-time or instantaneous message traffic. Here is how it will work: Suppose that the Eighth Army Headquarters in Korea has an urgent message for Seventh Army Headquarters in Germany. The message is sent by teletype to an access station ACE (Automatic Circuit Exchange) located in Korea which switches the request to the ADVENT satellite over the Pacific. The satellite relays the message instantaneously to a ground relay station in its line-of-sight in the Continental U. S. In turn the message is transmitted to the ADVENT satellite over the Atlantic and then to the ACE station in Germany—all in a time lapse of micro-seconds.

The Army's new role

Since the time of the Civil War and the wigwag flags and torches of Major Albert J. Myer, the surgeon turned communicator, the Army has pioneered new methods of communications for the past century. Today the use of the telephone, teletype, TV, radar—all serve to contribute to the command and control of our forces deployed on a world-wide scale. In addition, these means of communication—and the products of research and development to achieve them—almost always have benefited the civilian economy. Communication by satellite should be no exception. Although many will groan over the possibility of our TV cowboys invading the underdeveloped areas of the world, the feasibility of such systems as international mail sent by facsimile transmission may be a brighter note. Here is the possibility of "space mail" automatically sent to and received at any corner of the globe in the reasonable time, perhaps, of one day.

The use of satellites for communication is the first of the space projects that really contributes significantly to the Army role. Communication satellites promise more reliability, long-term reduction in costs, and a capability to exert the kind of command and control necessary for the ambitious new concepts deploying small dispersed forces over a large land area or for maintaining contact with STRAC on another continent. Far from avoiding the new medium of outer space, the Army is exploiting its potential with the forthcoming satellite communication systems, COURIER and ADVENT. If moving and shooting are geared for the atomic age, we are also upgrading communicating to the space age!

"Loud and Clear" is the best way to get the word on anybody's radio. We should expect to hear it more often in the future with the help of satellites.

A volunteer at the age of 10, Johnny Clem, "the drummer boy of Shiloh" became a lance sergeant at 12, was commissioned in 1871, and retired a major general in 1916

MATTHEW BRADY PHOTO FROM NATIONAL ARCHIVES

Forsan et haec olim meminisse juvabit: *perchance even this sorrow will be hereafter delightful to remember*

FAIRFAX DOWNEY

Of Such Stuff Are volunteers

This is a chapter from Mr. Downey's forthcoming book, Storming of a Gateway: Chattanooga, 1863, *to be published this month.*

I'VE Got Three Years to Do This In is the title of an Army bugle march, referring to the enlistment term. It might have been sounded as a warning during the Chattanooga campaign (20 October to 31 December 1863), for time was running short. The period of service for which the Volunteer regiments had signed in 1861 (after the ending of the 90-day folly) would expire in 1864. There was then no enlistment for the duration of the war, no effective draft law. Whether a soldier joined up again was a matter for his own choice.

Faithful men, war-weary and homesick, many bearing the scars of wounds, reenlisted in sufficient numbers for the Union to continue to overbalance the Confederacy's veteran manpower, now dwindling alarmingly. Historian Bruce Catton tells us that "In the western armies a company that had re-enlisted to the extent of three-fourths of its numbers (this was the percentage required if a regiment was to keep its old number and its organizational status) would parade through the camps, fife and drum corps playing and everybody cheering; the example was contagious and led others to sign up." They were still the Umpteenth Volunteer Infantry from their state and they were proud of it and the flag they followed. They deserved to be.

When the Volunteers put down their names for another hitch, they grumbled bitterly that they had done their share and it was high time they were spelled. Regardless, they re-upped, and the proportion willing to stick and finish the job proved vital to the war's issue. But for them the victories at Chattanooga might have been in vain.

The title of Volunteer was to persist in USV insignia during the War with Spain. Thereafter it disappeared. In both World Wars equitable and effective

administration of the draft successfully merged the conscript with the volunteer. By then divisions wore numbers as high as those of some state regiments in the Civil War, and regiments far higher ones.

Something of value was lost, inevitable though the change was, fitting as it was that national replace regional pride. State ties of the sixties were closer, as witness the great majorities that followed their states in supporting the Union or seceding from it.

THE Chattanooga campaign with the armies in the West reinforced from the East, was extraordinary as a mighty muster of the states. It was the Stars and Stripes or the Bonnie Blue Flag that rallied men in blue or gray when the heights were stormed or defended. Yet blazoned on the former's banner often was the name of the state of the regiment that carried it. And in the stand of colors beside the latter's red field with its blue St. Andrew's cross might wave the Palmetto banner of South Carolina or the Lone Star of Texas.

No drafted contingent vitiated the ranks of the Army of the Cumberland. There was one brigade of Regulars. Those Regulars, too, were volunteers but they never received the enlistment or reenlistment bounties paid other components. Between them and state troops sometimes arose antagonism similar to that of the Western and Eastern armies, and there were lively fights. "We're as good as Regulars," the Volunteers asserted, and often they were, but by and large they plainly admired the Regulars. On the other hand, a Regular battery, for instance, whose ranks were thinned by casualties, was glad to accept and absorb men from state infantry units. Since Regulars were recruited from all parts of the country, they lacked cohesion for which was substituted an esprit de corps inherited from the past and carried on to breed the old Old Army of the post Civil War years.

Units of the Army of the Cumberland and those of the other armies, North and South, took pride not only in the state of their origin but from characteristics and differences lending individuality, and hence promoting morale. From their records—the battle names on the colors. From a commanding officer—who was able or colorful or both. From a sergeant—as brave as he was tough—or their bands and drummer boys. From matters of physique such as tallness or in marching ability. From smart appearance or hard-bitten swagger—from some small variation in uniform which set them apart.

The National Guard with its state affiliations prides itself on its status as a volunteer force. Symbolic of this is the beautiful "hall of flags" in the new National Guard Association building in Washington where the flags of the 50 states flank Old Glory, and the Army and Air Force flags

NATIONAL GUARD ASSOCIATION

The 100th Indiana would follow its vivid commander anywhere. To enter battle Colonel Timothy O'Meara always donned his best uniform, sword at side, a foreign medal on his breast, and bright crimson silk sash about his waist, with an amulet he believed would protect him from harm slung on a cord around his neck. It was not vanity. There were others who believed a leader should always be conspicuous to his troops, like the general whom one war correspondent admiringly watched striding into battle, dressed in his finest. "There is a glitter of buttons and stars where he is, and they were seen glancing like meteors at Stone River, Chicamauga and Mission Ridge, in the thick of the fight. 'I want my men to know where I am,' he said, adding with a smile, 'and those baubles light a man to danger and to duty wonderfully well. He cannot decently *run* by starlight!' " But such officers were also conspicuous to the enemy.

At Missionary Ridge O'Meara's sash caught the eye of a Rebel sharpshooter, and the amulet was unavailing. The Colonel died, drilled through the body, and around him fell 132 men of his regiment, killed or wounded—43 per cent of its strength.

THERE were so many tall men in the 21st Wisconsin that it was called a regiment of walking Liberty Poles. The 104th Ohio fought adaptably and philosophically with the variety of firearms ranging from the hard-kicking Austrian musket to some of the earlier repeating rifles whose recoil was hardly less severe. They were known as repeaters, remarked the shoulder-sore 104th, because "as soon as the operator regains consciousness, he can repeat the operation."

No colors in the war can have been more copiously inscribed than the 9th Michigan's. On its folds was proclaimed: "Presented on the 23rd of October, 1861, by the Rev. George Duffield, of Detroit, to the 9th Michigan Infantry, his son, Col. W. W. Duffield, commanding." Remaining space was reverently filled by the donor with: "Thou has given a banner to them that fear Thee, that it may be displayed because of the truth. In the name of God will we set up our banners!" In contrast the 10th Michigan contented itself with the grim promise, *Tuebor*—I Will Slay.

Pride of arm of the service marked the veteran Pennsylvania artillery unit, bearing the name of Joseph M. Knap who had organized it and given it four cannon. "To us," the redlegs declared, "the cavalry were only 'turkey stickers' and the poor, looked-down-upon 'doughboys,' only useful to pull our mired guns out of the mud when the horses were unable to do so; in our eyes no branch of the service was equal to the artillery, and no battery equal to our own, Knap's Pennsylvania Battery."

Several Wisconsin regiments were almost solidly Scandinavian. Colonel Hans C. Heg commanded the 15th—Norwegians, Swedes, and Danes—with about every other man answering to the name of Ole. Companies were called St. Olaf's Rifles, Oden's Rifles, the Norway Bear Hunters. The Dane Guards and the Scandinavian Guards were companies of the 3d Wisconsin.

The stirring rattle of the Long Roll would always mean Johnny Clem to the 22d Michigan. When he offered to enlist, the regiment had refused him though more kindly than had his earlier choice, the 3d Ohio, whose colonel snorted that he "wasn't enlisting infants." Johnny was only ten. There were drummer boys as young in both armies. Not until March 1864 did Congress raise the age bar to sixteen. But John Lincoln Clem was short and light for his age: just 30 inches tall and weighing 60 pounds. On the chance that the 22d's mind might be changed, the youngster ran away from home and joined the Michiganders after they had marched too far to send him back.

They let him stay with the regiment and made him Company C's drummer. If the little fellow began to stumble from fatigue during long hikes, an officer would dismount and hoist him up in the saddle. One pictures him riding along gratefully, still beating out cadence on his slung instrument—a one-boy mounted band. Officers chipped in a private's $13 a month for him until he was put on the payroll in May 1863.

Musician Clem beat his drum expertly and fervently until a shell smashed it at Pittsburg Landing. Thereupon he became "The Drummer Boy of Shiloh" but promptly abandoned his wrecked instrument for a musket, cut down to his size. "I did not like to stand and be shot at without shooting back."

He caught a ride on a caisson in Chickamauga and hopped off at the battery position to fight with the infantry. A Confederate colonel galloped down on him, saber upraised, shouting, "Surrender, you damned little Yankee!" Johnny raised his musket, shot him out of the saddle, and went forward. He had taken the first of his two war wounds, a shell fragment in the hip, when an enemy attack cut him off along with a number of comrades. As the prisoners were being herded to the rear, Johnny dropped in tall grass and played dead until he was able to crawl back to his own lines. While in the hospital, he was promoted to lance sergeant—at the age of twelve.

After the war he sought admission to West Point, but inadequate schooling disqualified him. However, President Grant commissioned him in 1871 and, then five feet, 105 pounds, he joined the 24th Infantry as one of the Army's shortest and smallest officers on record. Later transferring to the Quartermaster Corps, the Drummer Boy of Shiloh had risen to major general when he retired in 1916.

WHEN the 6th Wisconsin Battery took the field, it turned in its sabers as encumbrances but kept its fiddle, banjo, tambourine, and clarinet. After the fall of Vicksburg it celebrated with another relaxation. "The demon of the bowl prevailed," an abstemious young cannoneer wrote in his diary, and quantities of "infernal liquid" were downed. Otherwise the 6th

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At Missionary Ridge on 23-25 November 1863, volunteers north and south, followed their state and national colors

was attentive to its duty, maintaining the principle that good light artillery must always be mobile by special care of its horses. It regularly watered and fed them—whenever forage was to be found—swam and washed them when it camped near a river or creek, and applied oil to harness. Resourcefully it picked up spares and replacements as opportunity offered; raids on Rebel plantations of East Tennessee provided ten fine horses and 20 mules. Sturdy creatures, they survived the lean days of the siege of Chattanooga when feed was scanty or non-existent. The artillerymen suffered, watching their starving animals eat their halter straps, so that chain ones from the battery wagon had to be substituted. The 6th harnessed, hitched and moved out because it must.

The 2d Michigan Cavalry had been commanded by officers who led a corps and a division at Chickamauga. The future corps leader, Gordon Granger, then a Regular Army captain, had trained the regiment sternly. A frown from "Old Granger" was reputed to kill deader than a flintlock musket, but not all the 2d stood in awe of him. Once the CO, wearing no insignia of rank, made a surprise inspection of stables and bawled out a trooper for the way he was grooming his horse. When the man made an impudent retort, the Colonel demanded, "Do you know who I am?" "No," snapped back the answer, "and I don't give a damn." The story went that Granger picked up a board but beat nothing but a hasty retreat before a pitchfork grabbed by the trooper. "Let Old Granger put on his shoulderstraps if he wants to give any orders around here," the trooper announced. No charges were preferred which may well have been one reason why the regimental historian wrote of its first commander: "Later in the war the regiment thought much of him; in fact were proud of him."

Phil Sheridan later headed the 2d for a time, after the 3d had refused to be saddled with that "little red-faced Irishman." And the 2d also had cause to be proud that it had once followed the future chief of cavalry of the Army of the Potomac.

PERHAPS the most remarkable unit in the Army of the Cumberland was John T. Wilder's Lightning Brigade, originally composed of the 17th and 72d Indiana Infantry regiments, with the 92d and 98th Illinois Infantry and the 18th Indiana Battery later added. The enterprising commander, frustrated by the forays of Forrest's, Wheeler's, and Morgan's cavalry, determined to mount his doughboys to cope with the enemy. He put it to a vote of his men, which was Aye, but started them on quiet, convalescent nags to prevent a change of mind. Then the brigade began to raid the countryside for good mounts. Besides

yields from barns and pastures, it found them hidden in woods and caves. One fine animal was discovered concealed in a lady's back parlor. The raids netted a total of some 2,000 horses, plus mules for the wagons, all without expense to the Government. Saddles, hard to come by, were improvised from blankets and gun straps. There were no stirrups; a man with full equipment could not mount but had to have it handed up after he had vaulted aboard his steed.

No forage was drawn until the spring of 1863; the brigade supplied itself from the farms of Southern sympathizers. Coal was confiscated for the farriers' forges, and wagons rebuilt from wrecks scattered along the road. When saddles and cavalry uniforms finally were issued, Wilder's men stripped the yellow stripes from the breeches and jackets. They were not cavalrymen but mounted infantry, and proud of it.

Wilder spent his own money, later reimbursed, to buy invaluable Spencer repeaters for his command which also boasted some unconventional armament. "Each man carries a hatchet with a handle two feet in length,—whence they have acquired the *sobriquet* of 'the Hatchet Brigade.' Their hatchets are described as handy and effective both in bivouac and in fight. . . ."

They became good horse soldiers, those mounted infantrymen of the Lightning Brigade, living up to their name throughout the Chattanooga campaign.

THE Confederate Army also "had three years to do this in"—three years and a little more. Most of its original enlistments had been 12-month instead of nine-month men. Hence the terms of those who rejoined thereafter were expiring in the spring of 1864.

A draft law, preceding the Union's, had been passed by the Confederate Congress in April 1862, covering all male whites, not legally exempt, between the ages of 18 and 35, a limit later extended to 45. From the outset the same troubles beset the South as the North. A rush to enter the exempted classes, hired substitutes, buying out of the service for $500 (a privilege allowed those with religious scruples), a swelling stream of desertions.

Yet volunteers continued to come forward south of the Mason-Dixon Line as north of it, in spite of the same war-weariness, homesickness, and misgivings. When terms ran out, the Gray camps saw scenes similar to the Blue's. "A favorite device of officers to inspire pledges to further service was the assembling of men for dress parade, addressing them in patriotic vein, moving the flags a few paces up ahead, and then asking those who were willing to re-enlist for the duration of the war to step up to the colors. When the lead was taken, whether by few or many, the impulse for all to follow suit was usually overwhelming."

Among the volunteers, numbers of those from South Carolina surely were animated by strong motives in addition to patriotism. Theirs had been the first state to secede, and they ought to see it through. Besides, as the war went on, they could not escape a sense of being singled out by the enemy—a backs-to-the-wall, almost a no-quarter-given feeling. South Carolina stood accused of starting the war, and she must pay for it. An incident at Chickamauga supplied Palmetto State troops with convincing evidence.

A South Carolina brigade was holding the line with units of Hood's Texans. For the time being it was live-and-let-live between the latter and enemy pickets.

"But the South Carolinians, whose picket line began at our left [wrote one of the Texans], their first rifle pit being within fifty feet of the last one of the First Texans, could make no terms whatever. The Federals charge them with being the instigators and beginners of the war, and, as I am informed, always excluded them from the benefit of truces between the pickets. It is certainly an odd spectacle to see the Carolinians hiding in the rifle pits and not daring to show their heads, while, not fifty feet away, the Texans sit on the ground playing poker, in plain view and within a hundred yards of the Yankees. Worse than all, the palmetto fellows are not even permitted to visit us in daylight, except in disguise—their new uniforms of gray always betraying them wherever they go."

The South Carolina-Union feud ran its bitter course through the destructive invasion of the state. While Sherman's army was approaching Columbia, the capital, Union soldiers sang:

> Hail Columbia, happy land!
> If I don't burn you, I'll be damned.

THE W. P. Lane Rangers, originally and eventually cavalry (Company C, 2d Texas) unwillingly served through an interval as infantry. As horsemen they hated the long marches through wet pine woods, trees so thick they "were warranted airproof." Feet seemed almost a solid blister, and shoulders were worn raw by straps from which hung arms and equipment: rifle, cartridge box, canteen, a blanket which, when sodden, felt as if it added 30 pounds—to say nothing of a heavy sack of rations, a knapsack, and 60 rounds of ammunition "to keep her steady." Yet the Rangers refused to join the "wagon dogs"—shirkers who sneaked off to the wagon trains for rides. There were few stragglers in Hardee's Corps; that strict veteran insisted that his book on regulations and tactics be taken literally. Through the East Tennessee campaign the Texans lived up to their conception of the duty of a soldier: he fights like blue blazes when told to and runs like a wild turkey when he knows he's whipped. But during the retreat from Chattanooga the ex-cavalrymen decided they had had all they could take. By twos and threes they slipped off from Bragg's army and made their way back to the old outfit to climb on a horse again.

Captain John Morton's battery of horse artillery was a mainstay of Forrest's cavalry. Its young commander could not resist a bit of display which seemed

appropriate for a dashing gunner. Like Yankee Doodle (he would not have liked the comparison) he stuck a feather in his cap and preened himself on it until he heard an infantryman call out, "Pretty bird, I'll catch him a worm in the morning." Blushing, Morton plucked out the feather and rolled it in the dirt. Nevertheless he carried in his blanket roll a new uniform to be donned on his twenty-first birthday. Alas! just before that occasion the uniform was devoured by a hungry mule.

The battery's armament was light pieces: four 6-pounders and two 12-pounder howitzers. Morton called them his "Bull Pups" and saw to it that they were well served in support of "The Wizard of the Saddle," often galloping them into action in front of the cavalry skirmish line. At Chickamauga a historically minded cannoneer harked back to the Revolution to assure him: "All right, Captain. We'll whip this fight, or Molly Stark's a widow."

Captain Charles L. Lumsden demanded discipline of his battery, as might have been expected of a graduate of Virginia Military Institute and commandant of cadets at the University of Alabama. After the first payday he forbade gambling but could not always halt such soldier pranks as filling the trumpet with water on cold nights so that it froze and Reveille could not be blown. Whenever possible, the battery lived in comfort, served by a dozen Negro servants of officers, noncommissioned officers, and privates. These excellent cooks managed even during hard campaigning, baking dough on entrenching shovels, or breaking up hardtack with an ax and making a palatable dish with it. The battery's foragers, sacks of corn and sheafs of hay across their saddle pommels, galloped across the front of blazing Federal cannon on Moccasin Point, yelling at the enemy, "You can't shoot worth shucks!"

The 20th Tennessee Regiment Volunteer Infantry was one of the many that emphasized the Volunteer in its title. Its antipathy toward drafted men was expressed in lampooning verses by Captain Albert Roberts of Company A. Curiously, he chose to parody a familiar poem of the day, "I Am Dying, Egypt, Dying," by the Union brigadier, William H. Lytle, who would be killed at Chickamauga by a sharpshooter's long-range shot.

I'm conscripted, Smith, conscripted,
  Ebb the subterfuges fast,
And the sub-enrolling marshals
  Gather with the evening blast;
Let thine arms, O Smith, support me.
  Hush your gab and close your ear,
Conscript grabbers close upon you,
  Hunting for you far and near.

Though my scarred, rheumatic "trotters"
  Bear me limping short no more,
And my shattered constitution
  Won't exempt me as before;
Though the provost guard surround me,
  Prompt to do their master's will,
I must to the "front" to perish,
  Die the great conscript still.

Finally, Roberts concluded, it was not enemy fire but "bust-head whiskey" that finished off the conscript.

The 20th rejoiced in its regimental band which rallied it at Missionary Ridge by playing "Dixie."

"My poor orphans!" General John C. Breckinridge, CSA, sadly exclaimed when he surveyed the gaps in the ranks of his 1st Kentucky Brigade, re-forming after a bloody repulse in the Battle of Stones River. He had given his command a name that clung to it ever afterward: the Orphan Brigade.

Among its devoted soldiers was Johnny Green of the 9th Kentucky. Before Chickamauga a strong presentiment of death seized him. "I offered up a prayer that the Lord would guide me and strengthen me," he remembered, "and that when death came to me it would find me gallantly doing my duty, that my first desire should be not that I might escape death but that my death should help the cause of right to triumph." But it was comrades in the ranks beside him that the minié balls cut down: John Fightmaster, who would fight no more; Benjamin F. Butler, who would no longer have to disclaim relationship to the hated Union general of the same name; Flying Cloud, a Mohawk Indian chief.

THE 5th Company of the Washington Artillery, from New Orleans, had been organized later than the original units of the battalion whose service was with the Army of Northern Virginia, while that of the 5th was in the West. At Shiloh the 5th distinguished itself. When it went into action on Missionary Ridge, uniforms were somewhat ragged, belt buckles embossed with the Louisiana pelican were tarnished, and its teams no longer were all matched grays. There it fought its four bronze Napoleons and two 6-pounders gallantly until an enemy attack from flank and rear forced a retreat. Its guns were mired and lost, but crews helped man those of other batteries.

The old custom of naming cannon was followed by the Washington Artillery, two of whose howitzers were named *Redemption* and *Resurrection*. Captain Robert Cobb's Kentucky battery, reputedly at Bragg's request, christened its Napoleons after ranking generals: *Lady Buckner, Lady Breckinridge, Lady Lyon*, and *Lady Gracie*—polite designations which tough cannoneers probably either disregarded or reduced to "Old Buck" and the like.

Forsan et haec olim meminisse juvabit: perchance even this sorrow will be hereafter delightful to remember. Such vignettes of a few of the units engaged at Chickamauga and Chattanooga seem to bring them back to life far more than do the monuments and plaques on the battlefields.

ARMY cerebrations

WHAT MAKES THE GUARD GO? *Its efficiency and ever-increasing combat readiness contribute to the National Guard's pride*

Maj. ROBERT DE MARCELLUS

An insurance salesman at a family funeral could hardly seem more irrepressible than a National Guard officer amidst a group of Regulars. Can't anything make him stop putting in one sly plug after another for his product?

To understand why he cannot be hushed up or made to behave with proper decorum is to understand the National Guard. Today, many Regular officers have served as evaluators and advisors with the Guard and have seen its tactical and technical ability; the One Army concept, however, demands an even deeper understanding.

As the Guardsman stands among Regulars—usually while attending a service school—he is filled with deep pride. Even chance remarks that compare a Guard unit unfavorably to the Umpty-Umpth U. S. Infantry fills the Guardsman with a certain smugness. After all, it places the Guardsman, volunteer part-time citizen soldier, in the same league as the world's best professionals. He realizes too that the individual standings of fellow Guardsmen attending service schools show them to be as professionally competent as their classmates from the Active Army. There is far more, however, than the demonstrated efficiency of Guard units and their ever-increasing combat readiness that contributes to the Guardsman's pride.

Strangely, the National Guard, composed mostly of scattered company-sized posts of part-time soldiers, boasts a powerful esprit de corps that stems from certain basic psychological and organizational assets. The first of these is a form of discipline. Perhaps it is surprising to think of a reserve component being long on discipline, since from time immemorial the citizen soldier has been somewhat nonchalant in manner. Composed almost entirely of troop units, combat and combat support, heavy demands are made upon its officers. Not only is the unit commander responsible for all the duties that are normally the lot of a detached unit CO; but added to them are the problems of recruiting, attendance, and a back-breaking supply responsibility. These factors are a tough discipline that impinge heavily on countless unpaid weekends and evenings. Slackness shows up immediately and weak commanders are somewhat ungratefully relieved of their burdens without ceremony. The commander who on active duty prides himself on "toughness," may not envy the Guard commander a month prior to summer field training, caught between pregnant and hysterical wives, recalcitrant employers, and beseeching pastors on one hand and on the other a division commander's unbending requirement that 100 per cent of all units attend the two weeks of active duty. The only analogy that could be drawn to demonstrate the demands on a Guard commander's time, would be if a Regular had to make a living in his off time.

The charge has frequently been made that the National Guard and the National Guard Association are "political." This is not true from the standpoint of political activity for parties, candidates or individuals—activity as taboo for the Guardsman as it is for the Regular. It is decidedly political in the sense of statecraft. Historically it has been a military association of those citizens who realize the need for preparedness to defend the land. Historically it has also been shown that the mere desire to organize and train units will not suffice. These same citizens must bring pressure to bear upon fellow Americans and legislatures to provide the weapons, materiel, and a sufficiently large body of Regular troops. This role of both soldier and legislator was played by almost all of the Nation's founding fathers, and it is conducted today by Guardsmen.

A third factor makes its contribution to solidarity. The Guardsman, officer and enlisted man, normally serves many years within the same unit. Nowhere in the Army today is there as much stability, and here are found many of the "Old Army" ways, lost today by the "revolving door" problem of active and many reserve units. Pride of ownership derives from this. The men who have officered a unit for many years, watched it grow, made it perform, and seen its young recruits mature to manhood and leadership cannot but succumb to the saying, "Once a Guardsman, always a Guardsman." The Regular evaluator who watches a Guard division concentrate on a day for annual field training may rate it "superior," but the Guard officer sees also the thousands of civilian occupations that these men performed the previous day, the hundreds of separate communities from which they marched, and the innumerable personal sacrifices voluntarily made; and seeing this he is immensely proud of his command.

The Guardsman looks to the Federal Government for equipment and tactical doctrine, but he looks to his state and community for command, tradition, and leadership. The Guard is built from the community up, not from Washington down. The Guardsman feels he "owns" his unit, that it is a product of his own initiative, sweat and resourcefulness, and that it is not a

mere instrument of the "State," but rather an association of volunteer fighting men formed from the citizenry on the premise that all rights and responsibilities begin and end with the individual citizen. These are old ideas, fundamental to the Guardsman. The concept of State rather than Federal control of the preponderance of the nation's fighting divisions during time of peace does not appear as an anachronism to the Guardsman. Instead he sees in this community and state responsibility the greatest bulwark to retain constitutional government and avert the drift towards an all powerful central government.

A dedicated man is sometimes a trifle fanatical. A Guardsman frequently may be hard to put up with; but in him the Regular will always find his staunchest ally and supporter—in battle and in Congress.

BABELBALONEY. *A universal second language—Cuban Spanish is proposed—would be a boon to all mankind, and especially to military linguists*

Lt. Col. H. F. WALTERHOUSE

Recently a regulation-reader type in Personnel blasted me from the sanctuary of my daily routine with the necessity for my taking an examination in the Spanish language. It seems that early in my career some conscientious clerk had carefully recorded the information that at one time I had studied Spanish. Now, 27 years after closing my college texts on what was then just another baccalaureate requirement, I am required to prove for the record something I already know. I no longer have even a boudoir acquaintance with the language.

Now I have a high regard for the talents of linguists who are capable of fluent communication in two or more languages, and I understand it is Department of the Army's policy to encourage the study of foreign tongues. But let's face it: even the most gifted are not capable of making themselves understood in more than an absurd fraction of the some two thousand languages of mankind. In fact, within the political boundaries of many countries there are divisive language and dialect differences. What happened at the unfinished Tower of Babel was done well.

The problem needs no further elaboration, but as befits a properly indoctrinated staff officer, I have a solution: a common second language. Admittedly the basic idea is not original. Furthermore, I am well aware that artificially contrived universal languages, such as Esperanto, have received negligible acceptance. The answer lies in a living language that can override political chauvinism and has a structure adaptable to relatively easy learning.

Needless to say, Russian and English would not meet either of these needs. Neither would the language of acknowledged allies. Most of the so-called neutrals are oriented one way or another, and, if suggested as a language source, would be certain to snarl the parliamentary processes of any United Nations committee for years, so the idea would founder.

I would like to propose Cuban Spanish as the language most likely to receive speedy and universal acceptance, except for a vociferous, but minor, dissent from Generalissimo Trujillo, and he can already understand the language. Cuba by virtue of geography and historical heritage is still on the West's social registers, but Dr. Fidel Castro is orbiting sufficiently leftward that the Kremlin would be reluctant to rebuff the candidacy of his tongue.

As a valuable source of immediate and necessary cash, Cuba might be voted an initial monopoly on dictionary sales, and we could effect a corresponding decrease in the prices we pay her for sugar. Cuban political refugees might be offered language chairs in our universities. Pan Americanism would become more pan. The Presidio of Monterey could be converted into a reclassification and retraining center for former linguists. The benefits to America, aside from the blessing of world philological homogeneity, would be enormous.

Incidentally, if our Ambassador wishes to introduce a resolution before the United Nations, I hereby renounce all copyright privileges in the interest of mankind. All I want is a well-earned three-day pass.

HOW GOOD IS YOUR COLONEL? *Does he inspire or impede progress?*

H. F. HARDING

"Innovation" is a byword in military management these days, and many soldiers regard our colonels as being chiefly responsible for its success or failure.

Do colonels get in the way, or do they create the atmosphere under which innovation thrives? Do they inspire progress or impede it? The answers depend on the respondent.

Many colonels will tell you that not much ever gets done without *their* constant inspecting, prodding, and following up. But ask those who work for the colonels, several levels below. They whistle a different tune.

"Most of the really good ideas are squelched before you can take a deep enough breath to defend them." It seems to be a common belief that many colonels murder good ideas.

As usual, the truth rests somewhere in between. Not all colonels are bad, and neither are all good. Not all are brilliant and not all are stupid. Some are naturally conservatives, some are naturally innovators. Here are five possible classifications:

The Conservatives prefer the *status quo* until high voltage strikes. Some then recover and adapt. Some stay put, some pass on. The Conservatives probably constitute 20 to 25 per cent of the colonel group.

The Will-Be Conservatives constitute another 10 to 15 per cent. With every passing year they become less and less willing to hear new ideas fairly. They've got it made, and they play it safe.

The Centrists are the mugwumps, or the fence-straddlers. They face different ways on different days: Mug on one day, and wump on the next. It's hard to get them off the fence, too. They refuse to delegate and they can't make up their minds. These constitute 40 per cent of the colonel group. They are hard to persuade; they dislike change; they are often the main obstacles to new ideas. They may be meek, but they do inherit many secure earthly jobs.

The Cautious Innovators want to adopt new ideas but they fear failure. So they try only when the chances of a flub are very slim. They make up 10 to 15 per cent of the colonel group. There is still some hope for them, however.

The Innovators are the nonconformists, the impatients, the questioners, the solution seekers, the nonbelievers. They are full of "constructive discontent" and they seldom stack arms. Once they do succeed in having their new ideas adopted, they move on to new problems. These officers are creative, they solve problems, they thrive on tough assignments. Carefully selected as colonels are, in any random sample there is seldom more than one innovator in five.

To which class do the colonels, light and heavy, leaf and bird, that you know belong? How can you tell? Their efficiency reports will not help you. Their friends who swear by them will often deceive you. You can be fooled by appearances yourself.

There is really only one sure way of selecting the right label for *your* colonel. That is to list what his command *has accomplished* (other than routine day-to-day tasks) in a period of six months or longer. What has he had done that was not done before? What has been done away with that's no longer needed? What is now being better done than it was before—with less effort, or less cost, or with less manpower? These are the ways to judge. Ask yourself these question and then make up your mind.

Some will say that good results often are attained without a colonel's direction or blessing. His good staff saves the day. True. But remember that when a command marks time usually it's because the colonel impedes new ideas. He gets in their way and his subordinates soon cease trying. They do not submit new ideas because they never see the light of day. Then the unit stagnates, its morale goes down, team spirit vanishes, motivation evaporates, efficiency sinks, and no one is happy.

If the GIs of higher headquarters would pass out forms for simple letter grades (A for Innovators, B, C for Centrists, D, E for Conservatives) based upon the *attitudes* of colonels toward innovation and their *accomplishments* with new ideas, we could make better appraisals. Every colonel's efficiency report should include a simple statement of what *new ideas* he has sponsored, followed, and succeeded with for the period of the report.

Who would make this evaluation? Why, of course, another more senior colonel or an officer who had been a colonel a few years before. Can we trust him and believe he was promoted because he was an A or B type of colonel? Let us hope so. Otherwise we are lost to the Conservatives (the big Es).

Are the attitudes and accomplishments of the innovator worth better appraisal in our system of recognition and rewards? If not, what *is* more deserving?

BRING BACK THE SIGNAL OFFICER. *Communications in the battle group headquarters should be handled by a Signal Corps expert*

Capt. A. A. ZAMPARELLI

For years we've been stressing the importance of communications. We insist that to be successful, a combat commander must be able to move, shoot and communicate. The arguments justifying the importance of communications are numerous and convincing. Why then have we dropped the signal officer from the battle group staff and gone back to the old infantry communications officer?

Was it because we are short of Signal Corps officers? If this was the reason we could have taken them from some less important units. Has the battle group no need for that degree of technical experience? Considering his responsibilities, does the battle group commander deserve anything less than a communications expert? Or was it felt that the signal officer lacked the tactical background? It might have been wiser to revise the Signal School's basic and advanced courses. If this were found impracticable, then Signal Corps officers could have been sent to The Infantry School.

Since its conception the battle group has come a long way, and has an even more promising future. This is hardly the time to impede its progress.

I remember one young Signal Corps captain who just couldn't grasp the intricacies of his job at battle group headquarters. The commander discussed the matter with the division signal officer. The captain was replaced by a more experienced officer, and transferred to the signal battalion for additional training. Such action is not always feasible, depending on the number of Signal Corps officers available. However, the battle group CO then was in a better position to handle the situation than he is under the current TOE. Today the adjustment probably would have to be done within the battle group.

This problem of finding an energetic and experienced communications officer is not new. In the regimental system we had the same trouble, but with this advantage: each infantry battalion had its communications officer. This not only increased the number of experienced officers throughout the Army, but also provided the commander a ready source of replacements to fill the job at regimental headquarters. Today's infantry captain has no opportunity to pre-

pare himself for that job. He must depend solely on what he learned at service schools and through self-study. If you think the job is not important, recall that the battle group has some 266 radios, and then think of the frontages normally assigned to it.

Within a very short time most of the bugs had been worked out and our signal officers learned to apply their technical knowledge. Coordination and cooperation between battle group and division signal officer improved, and why not? All officers came from the same school and spoke the same language. Realizing the possibility of a sudden transfer to a battle group, the division signal supply officer (also a captain) insured a steady flow of supplies. Maintenance was approached more realistically and subsequently reduced. A better understanding was effected between infantry and signal people in the battle group. They understood one another's problems and an atmosphere of mutual confidence developed. The future appeared even brighter than the present. Each area support platoon leader was a potential battle group signal officer. At last the commander had assigned to his special staff an expert to advise him on communications within the battle group.

Unfortunately, all that ended on 1 February 1960 when TOE 7-12D became effective. Now we are right back where we started, with all the old problems and many new ones. For a few short years we saw battle group communications in its proper perspective. We acknowledged the fact that it was more than a command responsibility. In a true sense it was a joint Infantry-Signal Corps problem, and was treated accordingly. During that time we observed a vast improvement in our communications system and the growth of our family of radios and other electronic equipment. Now all that is changed.

Our proud military history reflects our inherent reluctance to give ground. Call this change what you will, but remember that a withdrawal begins with a step backward.

S + C + T. *An equation that points to a solution of some logistics nightmares*

Lt. Col. KENNETH W. CROSS

At one point during the Civil War, President Lincoln wrote to General Banks: "This expanding and piling up of impedimenta has been so far almost our ruin, and will be our final ruin if it is not abandoned."

The "expanding and piling up of impedimenta" was not abandoned, however, even after the Civil War had become a memory. Not until recently have there been any expansive changes in the administrative support in the field army. During past wars the United States based its administrative support of the field army upon the massing of large amounts of materiel, equipment, and supplies in echelons beginning in the zone of interior and extending through the administrative zone and into combat areas. Mass-destruction weapons and the age-old bugbear of inefficiency have, however, made continuation of the system unthinkable. Furthermore, the overwhelming costs involved in maintaining numerous large stockpiles of the advanced weapons, materiel, and equipment are almost prohibitive.

If we are to abandon this practice, what system can we adopt that will effectively support a field army? A partial answer can be found in the application of the familiar physcial law, "Mass $\times$ Velocity = Momentum." If the stockpiles of World War II (mass) are to be drastically reduced, then the movement or transportation (velocity) of supplies and services must be increased proportionately to maintain the same momentum of support. Thus we see that the reduction in the quantity of supplies contiguous to the combat areas creates a demand for more rapid and continuous movement of supplies from source to user, without the multiple handling, transfers, and storage so common in past logistical operations.

To illustrate this principle, we can draw a parallel between the role of transportation in modern industry and the part transportation must play in the administrative support of the modern field army. An industrial plant relies upon many smaller suppliers to fabricate components and ship them to a central location for final assembly. The assembly plant cannot afford to tie up money or space in maintaining large inventories or parts. Yet it must operate continuously and at high efficiency to survive today's keen competition. The key to the success of such operations lies in the effective control and timely movement of components to the assembly line. Similarly, in the absence of large stockpiles, the key to effective supply support for the field army lies in the control and timely movement of supplies from source to the customer unit.

An analysis of the foregoing reveals there are three factors involved in effective supply support: the item itself, the control of the movement, and the movement of the item. This is expressed mathematically:

S	+	C	+	T
Supply item (or administrative service)		Control of the movement from source to user		Transportation of the supply item (or service) to required location

In this equation the S factor needs no elaboration. Obviously, if supplies or services break down, support ceases. The C and T factors, however, need some amplification.

The C factor implies an integrated communications system which states the need, determines a source, and controls the movement of the article from source to user. This permits diversions as necessary to conform to the tactical situation.

The T factor is the transportation of the required article to the using unit. Because of the increased demands that will be made upon transportation, it is an integral part of the administrative support equation, and the one most likely to be at a premium in any future war.

Not specifically included as a separate factor in this equation, but nevertheless an important feature when considering both C and T factors, is speed or timeliness of action. One thing that can never be re-

placed is time. What good is ammunition delivered one hour after a unit has been destroyed for lack of it? The administrative support system for today's field army must be instantly responsive to the needs of tactical units. Administrative support must be the servant—not the master—of the field army.

How can we increase the responsiveness of the administrative support system to the tactical situation? By formulating a coordinated and integrated system for controlling supply and transportation. This is being done. Some significant signposts on this road follow.

New transportation equipment is being devised to increase mobility and speed up responsiveness. New staff agencies are being developed which will greatly improve coordination and control of administrative support activities within the field army. Significant technological developments are under way which already are having an impact on concepts of administrative support.

The increasing emphasis on mobility and speed of movement is reflected, for example, in the development of GOER vehicles and the attempts to combine the best characteristics of the helicopter and the airplane. The large GOER, a 35- to 50-ton payload vehicle, will be able to bypass land obstacles, cross rivers and other inland waters, and cruise at 30 miles an hour. Research and development in short takeoff and landing (STOL) and vertical takeoff and landing (VTOL) aircraft are being pursued with great success both here and abroad. When these vehicles are in the hands of the field army, its speed of movement and mobility will be greatly improved. Responsiveness of the administrative support system will be enhanced.

Concurrently with the development of new vehicles, service schools and training centers are studying and testing several new staff agencies for controlling and coordinating administrative support activities. These are the division logistics control center (DLCC) in the infantry and armored divisions; the division logistic operations center (DLOC) in the airborne division; and the administrative support operations center (ADSOC) in the logistical command and field army. Normally these agencies include representatives of the G1, G4, and G5 sections, the trains command, and the technical services. Members of these agencies should have operational authority to enable them to solve rapidly, in coordination with others present, any administrative support problem that may arise and to effect maximum use of available transportation.

Among the most promising of the technological developments in the field of administrative support is the automatic data processing system (ADPS), which has been tested successfully in the Modern Army Supply System (MASS) experiment. This new experimental system almost instantaneously transmits a requisition from a lower supply echelon upward until it reaches an agency where the article is available. It issues a delivery order, and automatically adjusts all supply records concerned. The needed article is then delivered directly to the user by the most expeditious means. The use of this system in conjunction with improved means of transportation shows promise of satisfying the need for rapid responsiveness in supply support.

Transportation is an integral part of the administrative support equation. Dispersion, mobility, small scattered stocks, mass destruction weapons—all these greatly magnify transportation needs in the field army, making mandatory greater control and integration of movements with other administrative support functions. Steps are being taken, although perhaps belatedly, but further advances must be made to keep administrative support concepts and equipment abreast of developments in tactical doctrine and equipment.

If we abandon our old administrative support concepts and initiate modern innovations, we can avoid the "piling up of impedimenta" that may lead to our "final ruin."

S4 IS NOT A MAGICIAN. *Swapping and moonlight requisitioning will end when commanders cease making unreasonable demands*

Capt. GO GETTEM

"Captain Gettem, I want you to be sure we have three extra barrels and bipods for each LMG, a reserve of 25 sleeping bags per company, an extra carbine for each officer in addition to his pistol. Get rid of that radio in my jeep and get me that new model, so I can monitor the corps chatter when things get dull."

When he answered the Old Man, "Sir, I'll have to check with tech services, look into the regulations, TAs and so on, about these things," Gettem knew very well that none of them were authorized. More than likely, he will resort to subterfuge, swapping, or moonlight requisitioning. He recalled very clearly the chewing out he got the last time he tried to tell the Old Man sirens weren't authorized for battalion commanders' jeeps. So he decides to face the consequences of the inevitable IG inspection rather than the immediate wrath of the Old Man. No use reminding the CO that he could legally request these articles through command channels. The Old Man knew they wouldn't be approved, but he also knew that somehow his S4 would come through—or else.

A resigned Captain Gettem sets into high gear his well-tested and often-used Operation Octopus. This maneuver is designed to result in convincing the Old Man (in case the articles couldn't be procured) that the Army's entire supply system had been marshalled just to defeat S4's multipronged attack.

First of all, no regulation says you can't requisition anything that strikes your fancy. It's up to the tech service above you to disapprove. But they have

been known to slip, and your request might get past post headquarters. Sometimes a verbose justification larded with gobbledegook does the trick. Toss in the safety angle and slightly exaggerate the urgency of the need and you might create enough reasonable doubt at the various approving agencies to get it passed along to depot and finally filled. If the tech service disapproves, at least you have tangible evidence to show the Old Man you tried, but that next higher headquarters just doesn't appreciate how critical and desperate is the situation in your outfit (especially for you, the S4).

However, in case your flank attack on the Army's supply system meets with a reverse and you have to show the Old Man a disapproved requisition from an unsympathetic tech service, you then check the reports from the secondary attacks that have been taking place all along the front. Trading off your illegal excess for someone else's illegal excess can work to the advantage of both parties. It is amazing how rarely tech service outfits have supply problems. They seem to have a more readily available excess of supplies that each other tech service needs more than do the line outfits. The thing to do is be careful what outfit you pick to be S4 of.

When the defenses of the supply system have withstood all your attacks and you are forced to commit your reserve in a last desperate effort, you assemble your hard core of seasoned night raiders. From behind your black curtain you tell them through the handkerchief-covered microphone: "Men, this is your leader. The situation is critical, and success now depends upon you. Blacken your faces, don your sneakiest sneakers and let the moon guide you unerringly to your objective (warehouse 766). Don't engage in any skirmishes, and if sighted, run like hell and consider your three-day passes effective immediately."

It is unfortunate that the practice continues and that an S4's efficiency too often is measured by whether or not he got what the Old Man wanted, regardless of his methods. I know of one energetic and successful light-fingered S4 section that places a lot of pressure on the other S4 sections of a division to maintain its stocks of unauthorized supplies. Fortunately, many of our commanders stick to the rules and tell S4 to request extra equipment through proper channels if it can be justified. This allows S4 and his staff to take care of more important matters, such as making sure all *authorized* equipment is on hand, all requisitions and follow-ups are up to date, that supply records are accurate, surveys are properly processed. By doing those things they don't have to run all over the post and neighboring counties frantically making illegal deals to get the Old Man an electric heater for his headquarters van.

The solution rests with each individual commander, not the supply people. Division SOPs should not specify only spot painting to prepare an outfit for inspection by higher up, and then commend it for its outstanding vehicles, when everyone knows that two years' allotment of paint was used.

There is a continuing need for command action to halt this type of pressure. Most S4s will welcome the chance to work within the spirit of current regulations.

DEVICES AREN'T INTELLIGENT. *Those gadgets that gather information of enemy activity are nearly worthless if there isn't a trained intelligence officer at the receiving end*

Maj. R. W. SMITHSON

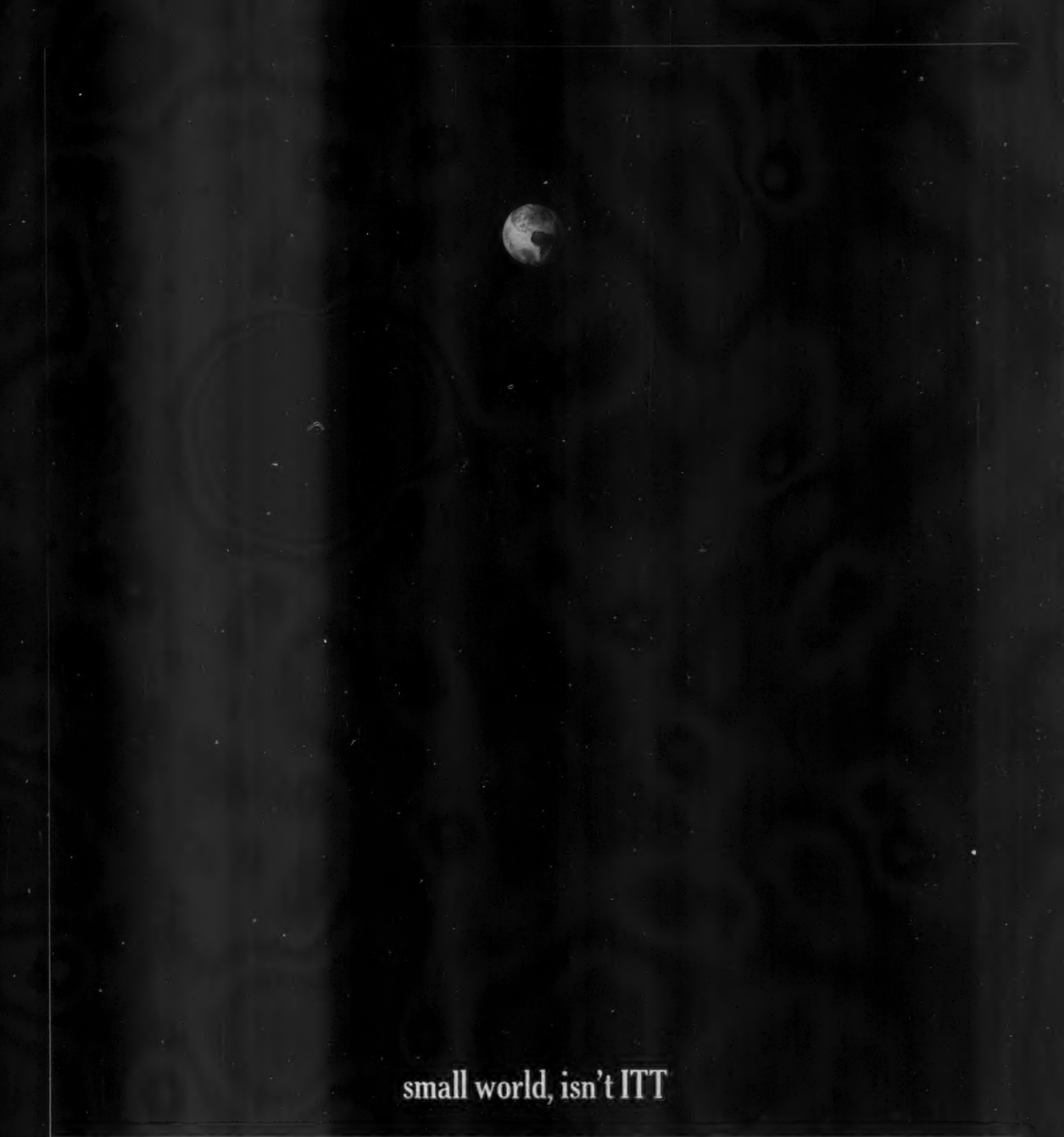
Recently many information gathering devices have been produced and issued to units in the field and commanders have been sold on the idea that these devices would assist their operations by providing reliable information of the enemy.

There has been a tendency to overlook, however, the most important function in the flow of information from the device to the commander, that of the Intelligence Officer. All the devices available will produce no more accurate or useful information than the ability of the intelligence officer to properly interpret and evaluate the *meaning* of these bits of information that are produced.

For example: at 0330 hours, the operator of a ground surveillance radar with one of the forward companies of the battle group reports that he believes he has detected two men moving in his area of search. Does the company commander call for final protective fires based upon this information? Or does he send a patrol to investigate? Or, as we hope, does he report this to the battle group S2? And what does the S2 do with this bit of information?

Here the intelligence officer alone must analyze and evaluate this minor happening and try and fit it into the jigsaw puzzle that represents his knowledge of the enemy. How reliable, for example, is the radar operator on duty? How long had he been on duty? Has the enemy been known to use this technique to cause us to give away our positions? Has he been known to employ some sort of spoofing device to fool our radar operators? By answering these and many other questions for each bit of information reported by all his sources the intelligence officer will come to a decision that will add to his knowledge of the enemy. The speed and exactness of his determinations provide the intelligence concerning the enemy that is required by the commander.

The company commander is his own intelligence officer but at all higher echelons there is an intelligence officer, the G2 or S2. Look at yours. Who is he? What is his background and training that qualify him for this position? What does he do on CPXs and FTXs? Does he really know his job, and if you entered combat today could he fulfill your intelligence needs or would he have to be replaced by a more competent individual?



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ARMY irons in the fire

MOBILE TELEPHONE SERVICE

A front-line telephone service, without wire lines and cables, is being developed for the Army by Motorola Military Electronic Division. The system will provide switched radio service to battle areas similar to conventional telephone service. The radio central, very high frequency transmitters, will be mounted in a weapons carrier or a ¾-ton truck, and subscriber stations, transmitters and receivers, will be installed in jeeps or armored personnel carriers.

UNDERWATER STORAGE

An experimental underwater storage system which will provide strategically placed fuel and supply depots in any pre-determined ocean area has been installed in the Gulf of Mexico.

The system consists of a series of inter-connected nylon-reinforced rubber tanks which can be filled or emptied by tankers. Developed by Firestone Tire and Rubber, the saucer-like tanks are semi-cylindrical in shape and, when filled, measure 14 to 23 feet in cross-section. Although the capacity of the experimental tanks is 10,000 gallons, it will be possible to make tanks with far greater capacities.

The tanks are secured to the ocean floor by means of a bored anchor. The tanks can be placed in almost any offshore position without endangering ship navigation and at any depth in which divers can operate safely.

MAKES SENSE OUT OF STATIC

A new broad-band communication system is being developed and field tested by the General Electric Company's Heavy Military Electronics Department. Known as "Phantom," this system receives and transmits intelligent noise or static and represents a radically new and different approach from the conventional narrow-band military communications technique.

For military communications broadband techniques provide three types of security: security against jamming because of the tremendous amounts of power required to interfere with the transmitted signal; transmission security since the average power is spread over a wide band width making the signal extremely difficult to detect; and message security in that even if the signal is detected, it can be made very difficult for an unauthorized listener to understand what is being transmitted.

IMPROVED SNIPERSCOPE

A new lightweight sniperscope sight known as the T-1 infrared gun sight will make enemy targets easier to see at night and shows a target image twice as large as the World War II version, giving more positive identification of the enemy. It also makes easier detection of enemy camouflage attempts. Designed for the Army Engineer Research and Development Laboratory, Fort Belvoir, by the Raytheon Company, it will fit almost every individual weapon now in use.

MOHAWK GETS SURVEILLIANCE GEAR

This first released photograph shows the Grumman Mohawk's SLAR (side-looking-airborne-radar) gear which provides a permanent aerial radar map of terrain on either side of the airplane flight path. The surveillance SLAR system provides the Army with radar photographic maps on either 4 x 5 inch film or 70 millimeter strip film. An inflight processor enables the observer to see a developed photograph seconds after the film is exposed. SLAR installation on the Mohawk, despite its size, does not affect the aircraft's areodynamic qualities. Grumman Aircraft Engineering Corporation currently is producing a total of 77 AO-1 Mohawks for the Army in addition to the original 9 prototype YAO Mohawks.

PORTABLE HANGAR

A portable aircraft maintenance hangar supported by air-pressure and a lightweight metal frame has been developed by the Army Quartermaster Corps for servicing Army aircraft in the field.

Half-oval in shape, the 80-foot long, 72-foot-wide experimental structure stands 36 feet high at the center and consists of a fabric "skin" over an auxiliary semi-rigid frame. Either end of the shelter can be opened in accordion fashion, eliminating door hazards and reducing wind load encountered by flat surfaces.

The structure is inflated by a small blower and is fully air-supported after closing the entrance by power or manually-operated

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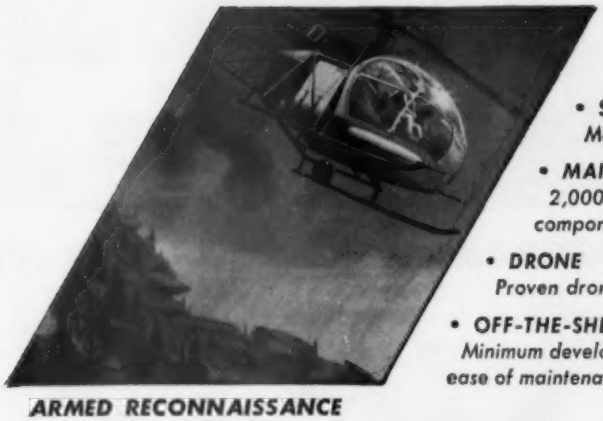

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GRUELING RELIABILITY RUN FOR XM-410E

The Army's Chrysler-built XM-410 light-weight, 2½-ton cargo truck recently completed a 10,000-mile reliability run across 22 western states. The 8 x 8 truck required only one non-scheduled stop and four quarts of added oil. Prescribed 3,000-mile preventive maintenance and lubrication stops were made when necessary. Seven models of the aluminum truck have been made and are being tested in Alaska and elsewhere. Fully loaded the truck weighs less than the Army's present 2½-ton 6 x 6 when empty and is 2½ feet shorter. It is air-droppable and can swim without advance preparation or kits. Independent suspension and large low pressure tires on each of its eight driving wheels are said to give it cross-country mobility comparable to that of tanks.

winches. User-testing of the experimental shelter for its designed function is under way at Fort Rucker. The shelter was designed jointly by the Army Quartermaster Corps and Birdair Structures, Inc. of Buffalo, New York.

THIN STEEL STRENGTHENED

U. S. Steel is now producing thin-gage sheet and strip from some of the toughest steels known to man. Formerly available only in plate form, 3/16-inch thick and more, these thin steels are heat treated (quenched and tempered) grades usually specified where extreme strength and toughness are needed. In heavy plates, the steels are used to fabricate armor, submarine hulls, bridge girders and pressure vessels. But now the light-gage forms offer new use potentials.

Thin sheets of U. S. Steel's "T-1"

SALVOS OF CHEMICALS

New weapons system capable of quickly and effectively saturating an area with chemical agents has been developed by Arthur D. Little, Inc., for the Army. Normal artillery-type fire control techniques are used to launch salvos of 45 solid-fuel propelled rockets. Upon impact, point-detonated explosive charges in rocket heads disperse chemical agents packed in nose-cone cavities.

MAULER AIR DEFENSE SYSTEM IS MOBILE

This is an artist's conception of the Mauler air defense missile system now under development for the Army by Convair. A highly mobile solid propellant weapon, Mauler is designed to destroy short range enemy ballistic missiles and rockets, and high performance tactical aircraft that bomb, strafe, harass or reconnoiter near forward battle area positions. One man can operate it. Each Mauler fire unit will be contained entirely on a self-propelled chassis of a standard design and will be capable of delivering accurate fire even while moving. The Mauler fire unit will be light enough to be carried by fixed wing aircraft or helicopter, and to be dropped by parachute in the battle area. Each Mauler fire unit will contain a power supply, target detection and electronic computer fire control equipment as well as its own basic load of missiles. The surface-to-air Mauler missile will be pre-packed in light weight cases that will serve both as shipping containers and as launching tubes.

For the U.S. Marines—ASSIGNMENT INTERCEPT

An advanced tactical early warning radar, Sperry's extended-range MPS-21 is scheduled for adoption by the Marine Corps. The air-transportable system sets up in less than eight hours to provide concise information for control of combat interceptors.

The radar antenna searches near and far skies providing the operator with range, height, and azimuth data. Height readout is numeric, requiring no calculation. The equipment can be adapted for track-while-scan operation. Radome is a dual-wall air supported structure, compartmented so as to remain effective even when a number of the sections have been pierced.

In all, the MPS-21 is an advanced example of U. S. capability today in the critical area of tactical early warning.

SPERRY

SURFACE ARMAMENT DIVISION, *SPERRY GYROSCOPE COMPANY, DIVISION OF SPERRY RAND CORPORATION, GREAT NECK, N. Y.*

constructional alloy steel, which has three times the yield strength of regular structural carbon steel, were used for the first time to fabricate various frame and superstructure components for the launcher of the Army's Sergeant missile. As a result, the rubber-tired vehicle weighs only 16,000 pounds, some 7,000 pounds less than if it had been built for regular structural carbon steel.

MOBILE KIT FOR HERCULES

The Nike Hercules air defense guided missile has gone mobile with the development of a field installation kit that allows the Hercules launcher to be moved and fired without a concrete pad. The M94 kit consists of three major assemblies: a blast deflector and its tie-downs, hydraulic jacks and outriggers, and a removable undercarriage for transporting the launcher. The Douglas Aircraft Company will produce the kit.

SPEEDIER ROTARY WINGS

A convertiplane that could fly more than 500 miles per hour is now possible, a Bell Helicopter Company engineer told the Institute of Aeronautical Sciences.

Bell Chief Research Engineer Robert Lynn said, "recent research investigations at Bell show that we now can design efficiently a convertiplane for maximum speeds in the area of 300 to 450 knots (345 to 519 miles per hour) and still retain desirable helicopter characteristics."

Lynn also held out great promise for the helicopter.

"Helicopter speed, range and usefulness will increase in the near future if proper research effort is forthcoming. Cruise speeds can increase 50 per cent over contemporary machines. This will result in greater range and even expanded use. Helicopters can have an efficient dash capability up to speeds of 200 knots (230 miles per hour)."

Present world's speed record for a helicopter is 167 miles per hour.

Bell is the builder of the XV-3 convertiplane for the Army. It is now being tested by NASA.

hot sparks

Development of a new electronic amplifier, to be among radar's most powerful microwave transmitter tubes, has been undertaken for the Signal Corps by Sperry Gyroscrope. The new device, a super-power klystron, will be available for use with Nike Zeus. It will extend future radars into the next higher level of super-power, which will be enough to serve as a basis for new types of electronic weapon systems.

Avco Corporation has changed the name of its Crosley Division to the Avco Electronics and Ordnance Division. The new name was selected because it is more descriptive of the work done by the division—development and production of electronics and ordnance items for the armed services.

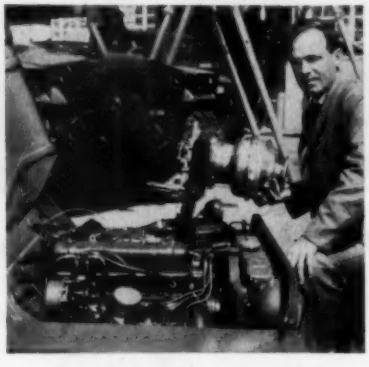
Tensile strengths of materials at temperatures near absolute zero are now determinable with a special cryostat recently developed by Arthur D. Little, Inc., and installed on existing tensile-test equipment at the U. S. Army's Watertown Arsenal. A cryostat is a special type of refrigerator, and in this application to tensile-testing, it cools specimens of structural materials.

General Electric and Nord-Aviation of France have entered into an agreement giving GE the right to build the Nord-developed SS-10 and SS-11 wire-guided antitank missiles.

The Corps of Engineers' new Geodesy, Intelligence and Mapping Research and Development Agency (GIMRADA) will coordinate and consolidate research and development in geodesy, intelligence and mapping to provide the Armed Forces with more accurate and faster equipment and techniques in these fields of military operations. The new agency will assume all functions of research and development previously handled by Army Map Service and Engineer Research and Development Laboratories' Topographic Department, including the letting of contracts for such necessary services as may be furnished by outside agencies.

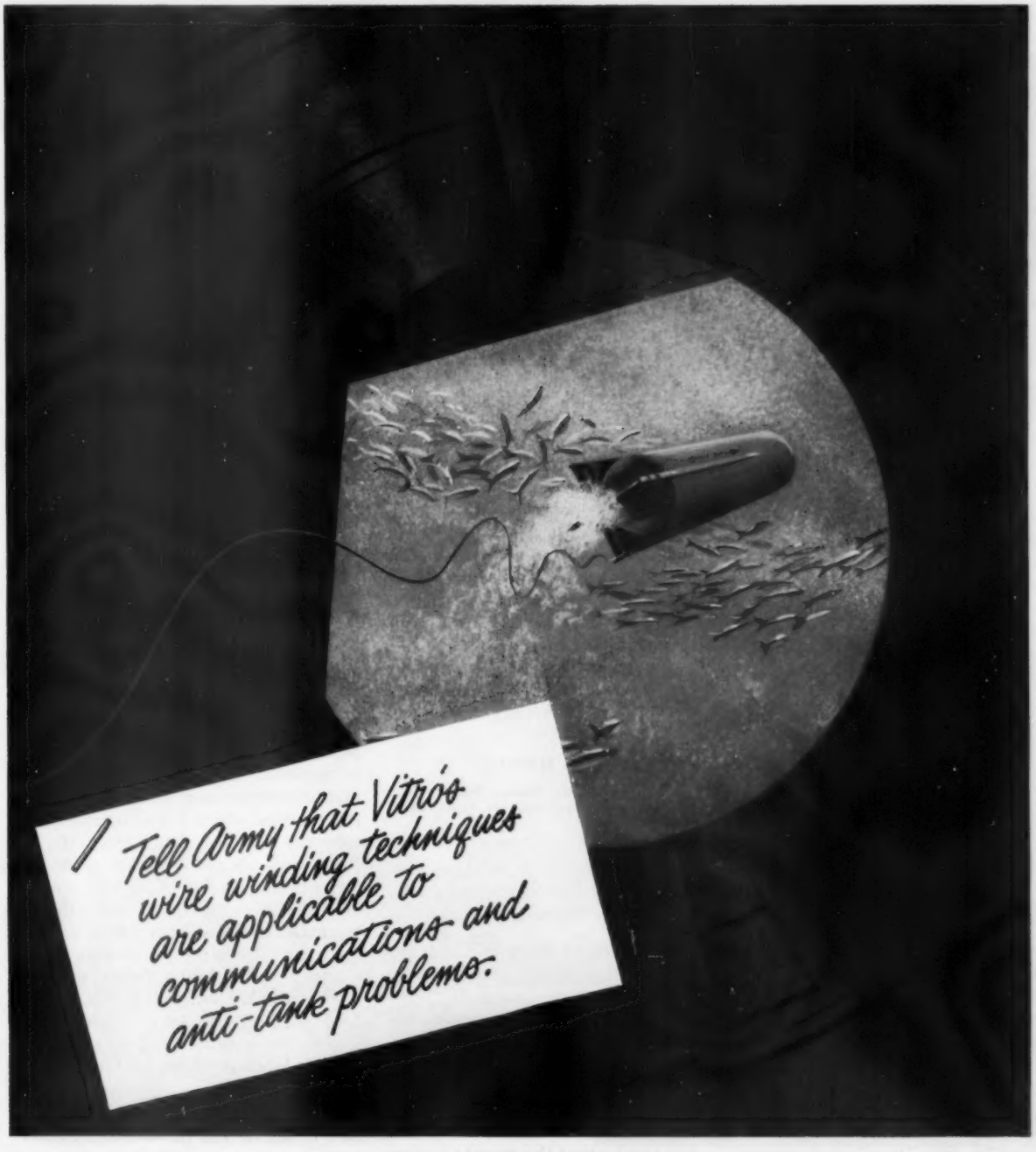
The British War Office has ordered the Vickers Vigilant missile for infantry trials. In development for the past three years, the weapon is wire controlled and man-portable, weighing only forty-five pounds complete. The new missile needs no control box and is launched from its carrier box and guided by hand-held sighting. It is lethal against the heaviest known armor and is instantly ready for use.

Since June, Vertol Division of Boeing has been conducting a special H-21C Commanders Training Course for several groups of Army officers. The course, believed to be the first of its kind offered by a helicopter manufacturer, was set up especially for Army Transportation Corps area commanders who are responsible for helicopters in their units but who are unable to attend Vertol's four-week mechanics training course. The officers range in rank from CWOs to lieutenant colonels, and are receiving their instruction at no direct cost to any government contract.



GAS TURBINE FOR JEEP

A contract for testing a revolutionary lightweight gas turbine engine developed by Williams Research Corp. in an Army jeep has been awarded by the Ordnance Tank Automotive Command. Here, Sam Williams, president of the Company, holds the tiny engine over the open hood of a jeep to show how it compares with the much bigger and heavier engine it will replace in the test. The engine weighs 50 pounds, develops 75 horsepower.



RIGHT NOW, VITRO IS HELPING THE NAVY change torpedoes into underwater guided missiles. ■ Today, wire guided torpedoes are key ASW weapons. Wire-guidance and bearing-rider fire control are essentials in modern underwater weaponry. Both were developed at the Silver Spring Laboratory. ■ Vitro engineers were responsible for the first wire guided torpedo system and its subsequent developments. These technical specialists are now engaged in programs to apply advanced, original concepts to underwater ordnance.

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SCIENTISTS AND ENGINEERS: JOIN THIS TEAM

ARMY books

DAWN OF AN ERA OF DREAD

NO HIGH GROUND. Fletcher Knebel & Charles W. Bailey, II. Harper & Brothers. 272 Pages; Index; $4.00.

Reviewed by

STANLEY L. FALK, who is currently working on the Army's official history of the development of the atomic bomb.

Fifteen years ago a lone American B-29 flew across the clear morning sky over the unsuspecting Japanese city of Hiroshima and dropped a single bomb. The bomb, ironically dubbed "Little Boy" by its makers, was about 14 feet long and 5 across, and weighed just under five tons. At exactly 0816, when it had fallen to a point of 1,850 feet above the ground, an explosive charge in its tail shot a small lump of uranium forward toward another piece of uranium in its nose. And at that instant the sky over Hiroshima was shattered by a ball of fire one third of a mile wide with a temperature at its center of 100 million degrees.

In this brief fraction of time on 6 August 1945, Hiroshima was fixed forever in history as the first target of an atomic bomb.

No High Ground is the story of this, the first atomic bomb, of the decision to use it and, to a lesser extent, of the great effort behind the development and manufacture of this overwhelming weapon. The authors, two Washington journalists, take their title from the old infantry maxim, "seize the high ground," and from General Carl Spaatz's warning that "the atomic bomb disposes of all high ground." Yet the implications of this warning are discussed only in the last few pages of the book, with a brief plea for arms control. Otherwise, *No High Ground* is first and foremost the fascinating story of the atomic bombing of Hiroshima.

The authors have done their work well. Their style is pleasant and fast-moving, and they paint an intimate picture of vital and dramatic events. Their book is essentially a human-interest story.

Yet in telling the general story of the atomic bomb, the authors add little of great importance to what has been written before. On major points they appear to have discovered no earth-shaking new material. The best account, for example, of the decision to use the atomic bomb is still Louis Morton's essay in the Army's volume, *Command Decisions*. And the emphasis in *No High Ground* on lesser details and personal experiences, while commendable and welcome in its revelation of new facts, creates an unbalance, giving more weight to some events than they deserve.

THE TASK OF NATO

NATO IN THE 1960s. Alastair Buchan. Frederick A. Praeger, Inc. 131 Pages; $3.00.

Reviewed by

LT.COL. ROBERT N. WALKER, Adjunct Professor of History at The American University.

This book, by the Director of the Institute for Strategic Studies in London, is an extremely well-written and thought-provoking examination of the military and economic forces which NATO as "the shield of the West" is attempting to keep in equilibrium *vis-à-vis* recent increases of Soviet power. Those who think about the present queasy area of unsettled international relations and who ponder the nebulous "ifs" of the psychological considerations which "forces in being" generate, will find Mr. Buchan's small book of inestimable value in defining contemporary international strategic and military problems and in suggesting certain possible and rational solutions to the present impasse between East and West.

For some of us NATO may be "out of sight, out of mind." Yet the answers to the many-faceted questions confronting NATO may well determine whether our civilization—or in fact the earth—will survive. All of us are in danger of being obliterated by the snowballing of a minor embroilment to the catastrophic level of a full-scale nuclear war: enough fissionable material is available, we are told, to destroy our planet.

Soviet advances in military hardware, with particular reference to nuclear weapons and guided missiles, and the continued existence of a vast ground army whose 20 armored divisions in East Germany, for example, form not an occupational but an operational force, have combined to increase markedly the power of the Soviet Union in NATO's second decade. Soviet forces, Mr. Buchan says, have nearly 100 per cent of postwar second- or third-generation equipment while NATO's forces are still largely supplied with World War II materiel.

The book's central thesis is that a greater degree of interdependence among NATO's 15 nations is imperative; this interdependence is to be pervasive and is to include the military power and strategic doctrine around which the alliance can cohere. Together with this, Mr. Buchan pleads for a system of deterrents not controlled by any one of NATO's members, but under the command of the alliance itself; and for a greatly improved posture in conventional military forces with mobile, combat ready reserves. In contrast, President De Gaulle's policy of "cooperation not coordination" is labelled a formula for military disaster.

Whether any NATO action or lack of action can deter the USSR from courses of action that run risks of general war is, of course, not known. Possibly the presence of U. S. air, ground and naval forces (the Sixth Fleet in the Mediterranean packs a nuclear punch); a full repertoire of hard (underground) and mobile-based missiles; other forces from the member nations on the periphery of the Soviet bloc and dedicated to preventing a Soviet conquest of their respective lands (for example, by use of small modern antitank weapons); nuclear-powered submarines with Po-

Your leadership counts when there's credit due

No doubt about it—you expect your men to do their jobs well. But a good leader knows the value of a pat on the back—sees to it that his men's achievements are recognized. So when a man under your command does a fine job, tell him about it; in front of others, if possible. Nothing boosts a man's morale like knowing his work is appreciated. *Giving compliments where they're deserved* is one mark of successful leadership—one proven method of motivating the men under you to do their best. And since a leader is judged by the morale and performance of his men...

you have a personal stake in leadership

TO **COMMAND** THE BEST, **KEEP** THE BEST • **U. S. ARMY**

laris missiles; and a strong highly mobile NATO force with first-class conventional weapons—all of these may function to "enforce the pause" which will "give both sides the necessary days or hours to reach a considered political decision on whether they will return to the conference table or progress to total war."

Another idea advanced by Mr. Buchan concerns the need for constructing "hard" missile-launching sites which will be operable for the counterstroke *after* the aggressor's preemptive strike and which would constitute a deterrent which cannot be entirely eliminated.

NATO's task in the sixties is to avoid schism in its ranks, to achieve a flexibility of reaction that will match the range of options open to the Reds, and to sway uncommitted world opinion in favor of NATO's moral and spiritual objectives (the "Free World" idea). It must do this in the face of Russia's relative independence of overseas trade and good will, her interior lines of communication, and her apparent willingness to sacrifice living standards to defense. "Nuclear war cannot be won, it can only be deterred" is the lesson for the world as Russian roulette is being played with the future of the human race.

TWO GERMAN LEADERS

MY LIFE. Grand Adm. Erich Raeder. U. S. Naval Institute. 430 Pages; Illustrated; Maps; Index; $6.00.

DOCTOR GOEBBELS. Roger Manvell and Heinrich Fraenkel. Simon & Schuster. 306 Pages; Illustrated; $4.50.

Reviewed by

LT. COL. H. A. DEWEERD, author of books on leaders of both World Wars.

These books deal with two men who served Adolf Hitler in important ways. The first is the autobiograhpy of Admiral Raeder, creator of the German Navy, which under his leadership caused Britain and the United States so much trouble and inflicted such heavy losses upon our shipping. The second is a biography of Joseph Goebbels, club-footed neurotic minister for propaganda of the Nazi Party.

One can read Raeder's book with appreciation for his religious beliefs, for his character and integrity, if beset by ever-increasing wonder about his persistent naivete. That is not the case with Goebbels; the book leaves the reader with a heightened impression of the depravity of the man who could seal the collapse of the Nazi regime by murdering six of his children. In their different areas of responsibility, Raeder and Goebbels were exceptionally able men. Both started as starry-eyed admirers of Hitler and ended up in disillusionment.

Readers familiar with the Doenitz memoirs, with Admiral Rugge's writings, with *The Führer Conferences on Naval Affairs*, and with Martienssen's *Hitler and His Admirals*, will not find much that is new about World War II in Raeder's autobiography. But there is a great deal of new material about other things of interest, such as Raeder's career in World War I, his efforts to build up the new German Navy between the wars, the role of the German Navy in the Spanish Civil War, his struggles with Goering over a naval air force, his deteriorating relations with Hitler, and his trial and imprisonment as a war criminal. Since this is a joint review, it is worth noting that Raeder mentions Goebbels only two or three times and always in a critical fashion. They differed profoundly over the Nazi Party treatment of religion in the armed services.

Raeder's personal griefs, like those of the Third Reich, began when he took Hitler at his word. Of his early reaction to Hitler he writes: "The personal impression that Hitler made on me . . . was the same that he made on everyone—that he was an extraordinary man who was born to lead. His knowledge, acquired through intensive study [of what?], was vast and varied. Not only had he stored up this knowledge . . . but he had also digested it, and his ability to get immediately to the heart of a problem . . . was amazing."

Thereafter Raeder saw no inconsistency between Hitler's assurances that he would never go to war with Britain and the German naval building program that made sense only in terms of a war against Britain. Raeder found no reason for objecting to the Nazi persecution of the Jews—until certain Navy officers known to him were involved. He tolerated Hitler's treatment of General von Fritsch, though he (Raeder) had nominated Fritsch as Blomberg's successor. He "thought" Hitler had accepted his advice not to go to war with Russia in 1941. He "thought" Hitler meant what he said about opposing the brutal activities of Terboven as German Commissioner in Norway after 1940 but, as in so many other cases, Raeder found that this was not so.

Admiral Raeder's strong admiration for Hitler's insight into military affairs lessened as Der Führer was unable to appreciate the role of German capital ships. For a time he hung onto office despite his resentment over Hitler's criticisms of the surface fleet. The loss of the *Bismarck* was the turning point. After that Hitler no longer pretended to follow Raeder's advice and he finally resigned in January 1943 in favor of Doenitz.

Raeder kept aloof from the officers' plots against Hitler. Like many of the former German officer corps, he claimed to know nothing about the atrocities of the concentration camps until after the war. The dilemma facing German officers serving Hilter is revealed in Raeder's contradictory discourse on pages 380-381. Here he stoutly maintains that he would have nothing to do with plots to do away with Hitler, but that he knew General Beck to be of "unimpeachable character." He concedes that the plotters were men of "honest hearts" who had no other intention than to replace a bad government with a good one. But he immediately rushed to have lunch with Der Führer and congratulated him on his escape as soon as he learned of the bomb attempt of 20 July 1944.

The book about Goebbels is interesting—if a less substantial one than the Raeder autobiography. The authors studied the unpublished parts of the Goebbels diary in the Hoover Library and interviewed many of his former associates. What they have produced is a "novelized" account of Goebbel's life which makes him seem to be a bigger heel than we formerly thought. As the war went against Germany, Goebbels suffered the tortures of the damned. He was particularly irritated at Der Führer's reluctance to give him unlimited power over the Reich's war mobilization. When finally he got these powers, after the bomb plot, he complained with typical crudeness to his colleague, Semmler: "If I had received these powers when I wanted them so badly, victory would be in our pockets today. . . . But it takes a bomb under his ass to make Hitler see reason." What an apt commentary

on the man whom Raeder and Goebbels tried so hard to serve!

CIVIL WAR REFERENCES

A COMPENDIUM OF THE WAR OF THE REBELLION. Col. Frederick H. Dyer. Thomas Yoseloff. Three Volumes; 1,796 Pages; Illustrated; Maps; Index; $30.00.

THE CONFEDERATE SOLDIER IN THE CIVIL WAR. Ben LaBree, ed. Pageant Books. 480 Pages; Illustrated; Maps; Index; $22.50.

THEY WHO FOUGHT HERE. Bell Irvin Wiley; Photos by Hirst D. Milhollen. The Macmillan Company. 273 Pages; Illustrated; $10.00.

Reviewed by

N. J. ANTHONY, Associate Editor of ARMY, who has done considerable research on the Civil War.

Dyer's *Compendium*, first published in one ten-pound volume in 1908 after some forty years in compilation, has long been out of print. Its 1,796 double-column pages, measuring 8 by 11 inches (the original was 9 by 12), list every conceivable fact about the Union Army's organization, units, commanders, campaigns and battles, and some about the Confederates.

Part I has statistics on enlistments and casualties, and describes all national cemeteries. The order-of-battle section lists, by states, 2,494 regiments, 126 battalions, and 939 separate companies and batteries; the 900 U. S. units with 50 or more battle deaths; an alphabetical roster of 7,800 officers who commanded brigades, divisions, corps and armies, with dates; an index, by states, of regiments of cavalry, artillery and infantry; all departments, armies, corps, divisions and brigades, with organic elements, names of commanders, and dates of detail to and relief from command.

In Part II actions and losses are arranged both by date and by state. There are 10,455 events which Dyer heads "actions, affairs, assaults, battles, campaigns, captures, combats, engagements, expeditions, occupations, operations, raids, reconnaissances, scouts [patrols], and sieges." Dyer was thorough.

The third part is "Regimental Histories," but the more than 3,550 sketches also include every action fought by separate companies, batteries and battalions. These give place of activation, date of muster in, attachments to and detachments from higher units, areas of service, combat actions, redesignations, date of muster out, and deaths from all causes.

The wealth of information in these three volumes is a monument to a dedicated man. To compile this record of the war in which he served, Dyer referred to the Official Records, "every book or work treating of that great struggle," state AGO records, registers, unit histories, and Government and state publications. His is the most reliable reference on the U. S. Army in the Civil War.

The Confederate Soldier in the Civil War resembles *Battles and Leaders*. Originally published in 1895, as the Rebel yell to that Yankee work and others like it, it is a ponderous volume: 12 inches wide, 16 long, 1.5 thick.

LaBree begins, of course, with the formation of the government through the secession ordinances, rosters of Government officials and members of the Congresses. As in B&L, there are descriptions of campaigns and battles by the Confederate commanders, with all sorts of statistics including orders of battle and casualty figures from the Official Records. All narratives are heavily illustrated by maps, battle scenes, and portraits.

The order-of-battle section includes departments, armies and corps, dates of activation and inactivation, and commanders. This is followed by a roster of the Confederacy's general officers and their commands. However, the user is

Selected Check List of the Month's Books

This is a run-down of some of the books we have recently received.

ADVANCE AND RETREAT. Lt. Gen. John Bell Hood. Indiana University Press. 376 Pages; Illustrated; Maps; Index; $6.00. Civil War experiences of the Texan who had the most spectacular rise of any Confederate. Everyone else is wrong, but despite its subjectivity a valuable source.

AU SERVICE DE LA BELGIQUE: DANS L'ETAU. Gen. E. R. Van Overstraeten. Librarie Plon. 359 Pages; Illustrated; Maps; 1,695 francs. As ADC to Albert I and Leopold III between the two wars and during the fateful days of 1940, the author has a unique story to tell. Valuable contribution to memoir literature.

COMPANY ADMINISTRATION AND THE PERSONNEL SECTION. Col. C. M. Virtue. The Stackpole Company. 486 Pages; Illustrated; Index; $5.00. Mechanics of the paperwork of supply and property, mess, unit fund, morning report and rosters, and all documents related to the personnel section. Has stood the test since 1933.

MEMOIRS OF WORLD WAR I. Brig. Gen. William Mitchell. Random House. 312 Pages; Illustrated; $4.95. An eyewitness account of our first war in the air, by one of the Army's most controversial figures.

THE NONCOM'S GUIDE. The Stackpole Company. 512 Pages; Illustrated; Index: $3.50. Fourteenth edition of this encyclopedia that covers all phases of the NCO's responsibilities. Even those aspiring to NCO rank would do well to study it.

PREPARING FOR THE MOS PROFICIENCY TEST. Capt. Robert A. Sullivan & John W. Gause. The Stackpole Company. 88 Pages; $1.50. A how-to book that can lead to higher pay, aimed at both commander and soldier. Illustrates standards for heavily populated MOSs: light and heavy weapons infantryman, infantry operations and intelligence specialist, infantry senior sergeant, combat engineer, armor crewman, field artillery basic, light and medium FA crewman, and FA missile (Redstone) crewman. Appendix lists MOSs for which tests have been prepared.

SMALL ARMS OF THE WORLD, 6th edition. Walter H. B. Smith & Joseph E. Smith. The Stackpole Company. 711 Pages; Illustrated; Index; $15.00. Since 1943 the best in the world on ammunition and powder, rifles, SMGs, MGs, shotguns, revolvers and pistols. Besides more than 1,700 pictures, describes mechanical actions of all small arms of every important nation. Joseph E. Smith (no kin to the late W. H. B. Smith) is a small-arms expert in the Office of the Chief of Ordnance. Well worth the price.

WEARING OF THE GRAY. John Esten Cooke. Indiana University Press. 572 Pages; Illustrated; Index; $7.50. Of his 29 books, this is the only one remembered today by this soldier-novelist who served as a captain on Stuart's staff. One of the best accounts of experience in battle and of life with the Army of Northern Virginia.

cautioned that when referring to vital statistics here, he would do well to check with Ezra Warner's recent *Generals in Gray* [see ARMY, November 1959]. This is a reproduction, not a new edition, and no effort was made at corrections. Some generals were still living when the book was first published. Officers are included who were not generals of the CSA but of state forces; for another thing, there are some errors.

Despite its title, the book also treats of the Confederate Navy and Marine Corps. There are lists and pictures of warships and blockade runners, state and government privateers, U. S. vessels destroyed, and illustrations and descriptions of "torpedoes" (mines).

Finally, there are photographs of war monuments in various cities, 17 pages illustrating Confederate money, a section of poems, and the CSA's four flags.

Even with the shortcomings mentioned, this book has its uses. It supplements *Battles and Leaders*, though one wag has called it "an objective history of the Civil War from the Confederate viewpoint."

Dr. Bell I. Wiley's writings are familiar to most soldiers. Besides his Civil War books he collaborated on two volumes in our history of World War II. *They Who Fought Here* is the personal story of the enlisted men on both sides. It is a happy combination of two earlier works, *The Life of Johnny Reb* and *The Life of Billy Yank*, skillfully condensed but supplemented by material lacking in those works so as to illustrate practically every detail of service.

To indicate treatment, in the chapter "The Opposing Forces," he goes into things like civilian origins, age levels, racial and national background, motivation toward volunteering, and attitudes toward the issues. Other chapters treat thoroughly such matters as organization and training; rations during campaign; uniforms and clothing, and shelter in the field; diversions, recreation, and camp life; what the soldier read and sang; attitude toward officers; misconduct and resulting punishments (they were cruel by our standards); morals and religion; health and sanitary measures (disease took a fearful toll); how the soldier was cared for when sick or wounded, and why and how he died.

The chapter on ordnance is a treat in itself. To supplement Dr. Wiley's descriptions of weapons and equipment of all branches, the numbers and many types issued, their ammunition and their tactical use, Mr. Milhollen supplies photographs that should delight the ordnance buff. (The rest of the photographs of typical soldiers, camp scenes, clothing, and equipment measure up to the same high standard.)

The Civil War was a war of movement, fought by doughboys, and so Dr. Wiley rounds out his account with a stirring chapter on who fought it and how: "Pass the Infantry to the Front." In this he pictures the march to battle, describes combat formations, tactical methods, conduct under fire, and the urge to duty that impelled men to feats of valor.

This is by far the best job of relating the Civil War at the foxhole level. Dr. Wiley recaptures the thoughts of Johnny Reb and Billy Yank as reflected in the many home letters he quotes, and revives their spirit. Reading this book, the combat soldier can see how he looked, lived and fought a hundred years ago.

BUNKER HILL IN DETAIL

NOW WE ARE ENEMIES. Thomas J. Fleming. St. Martin's Press. 366 Pages; Maps; Index; $5.00.

Reviewed by

MAJ. GEN. H. W. BLAKELEY, who has reviewed other works on the American Revolution.

Fleming's title apparently comes from the closing sentences of a letter Benjamin Franklin wrote to an old friend in London after the battle of Bunker Hill: "You and I were long friends. You are now my enemy and/I am yours,/B. FRANKLIN." The book's author, who is executive editor of *Cosmopolitan*, says in an interesting "Note on Sources and Methods" that his purpose has been "to transform the story of Bunker Hill from a few pages in a history text book to the magnificent drama of courage which it is." In doing this he employs dialogue, but says that "every conversation is rooted in historical fact." A condensed version of the book appeared in *Reader's Digest*.

In the "humanizing" of the battle, the most striking fact is that it was almost as truly a combat between fellow-countrymen as any engagement of the Civil War. Many of the officers on opposing sides had fought together in the French and Indian wars. Practically all fighters on the American side were either English-born or of English ancestry.

The British attack on the Charlestown peninsular positions was initially a difficult amphibious operation. Without unity of command, the Army did not get the help it needed from the Royal Navy. As in many amphibious operations in the year to come, the question of landing craft dominated the planning. The British had developed an effective flat-bottom landing craft with high wooden sides which gave some protection from musket fire, but none were available to Howe. Using rowboats, his decision as to the time and place of landing was dominated by the necessity of landing at high tide on a suitable beach out of range of enemy small-arms fire.

The regiments involved were among the British Army's finest. "Americans," say the author, "have little understanding of the pride of corps which has stirred Englishmen for generations and provided English military history with so many feats of heroism." The American troops in comparison were hardly more than an undisciplined mob without a chain of command or even a single commander. However, they did have some experienced fighters and some inspired leadership at critical moments.

Howe has frequently been criticized for having his men carry full field equipment and three days rations, but Mr. Fleming defends this decision on the ground that he was not planning merely to take Bunker Hill; he was going on to relieve the siege of Boston. Incidentally, the author seems to think the men also wore greatcoats. The British Army, according to Wylly's *The Army of Yesterday and Today*, didn't issue greatcoats to its men, even in winter, until 1794.

WHAT THE PARTIES SAY ABOUT DEFENSE

As the political campaigns for Presidential and Congressional elections come into the homestretch—with the Army and other Defense agencies striving to be *absolutely non-political*—military people could not help peeking into the future to see if they could discern the impact of either a Democratic or Republican victory. A comparison of the two party platforms shows that both parties assert a determination to keep the U. S. militarily secure. Short quotes from the two platforms are suggestive:

DEMOCRATIC PLATFORM

Deterrent military power such that the Soviet and Chinese leaders will have no doubt that an attack on the United States would surely be followed by their own destruction.

Balanced conventional military forces which will permit a response graded to the intensity of any threats of aggressive force.

Continuous modernization of these forces through intensified research and development, including essential programs now slowed down, terminated, suspended, or neglected for lack of budgetary support.

* * *

We believe that our armed forces should be organized more nearly on the basis of function, not only to produce greater military strength, but also to eliminate duplication and save substantial sums.

COMMENT

The Democratic platform reveals no specific promises for changes in Army capabilities, or in roles and missions. But Army proconsuls take heart from the pledge to "recast the nation's military capacity" and its promise of "diversity, balance and mobility . . . sufficient to deter both kinds of wars." From this, Army friends hope to find more emphasis on ground forces. *Diversity* would seem to provide both a conventional and nuclear capability in all services. But a hard-headed realist must sense that there is no absolute promise of change.

However, from the tone of campaign speeches and statements, it would look like more spending will be in order—if needed—under a Democratic administration. This would include airlift, and even a stronger push on missiles. The Zeus enthusiasts also predict production money without further delay.

REPUBLICAN PLATFORM

Unremitting modernization of our retaliatory forces, continued development of the manned bomber well into the missile age, with necessary numbers of these bombers protected through dispersal and airborne alert.

Development and production of new strategic weapons, such as the Polaris submarine and ballistic missile. Never again will they be neglected, as intercontinental missile development was neglected between the end of World War II and 1953.

* * *

A military establishment organized in accord with a national strategy which enables the unified commands to respond promptly to any kind of aggression.

COMMENT

Careful examination of the complete Republican platform reveals a policy of "more of the same" with a pledge touching Army missions only in three areas: *pushing development of an anti-missile missile.* (The only one under development is NIKE ZEUS, which so far has not had any production money granted it.) *Continued deployment of forces overseas.* (Annually, there have been rumbles of withdrawing our Army forces overseas, and this has been given added impulse by the gradual decrease in the Army strength.) *Continued military aid to our allies.* (This is significant because the Army has the bulk of the military program in both funds, and types of weapons being provided).

But the platform is significantly lacking in any promise to *modernize Army forces,* to increase the strength of ground forces, or to provide any additional airlift mobility for STRAC. All of these are important current Army objectives.

FRONT AND CENTER

(Continued from page 20)

General Lemnitzer, and other Army witnesses throughout the past Congressional hearings.

Command Changes

(Pictures on pages 24-25)

When General Lemnitzer was nominated to become Chairman of the Joint Chiefs of Staff, the musical chairs in the Army led to several surprising shifts, the most surprising being the appointment of General Bruce Clarke, now Commanding General of CONARC to go back to Europe for the fourth time, and command United States Army Europe, in Heidelberg. Along with this assignment goes the command of NATO's Central Army Group, which includes a small staff in Heidelberg. The surprise was occasioned because General Clarke will be 60 years old in March, and his retirement was anticipated. His pre-eminence as a ground forces commander without doubt carried great weight.

General Clyde D. Eddleman, now CG USAREUR, becomes the Vice Chief of Staff of the Army. This is a choice of experience, since General Eddleman was the Deputy Chief of Staff for Operations before going to Europe; a needed background for sitting in on JCS meetings when the Chief of Staff may necessarily be absent.

Lieutenant General Herbert B. Powell, now Third Army Commander, has been selected to head Continental Army Command, and nominated for his fourth star. He was Deputy Commanding General of CONARC before going to Third Army just a few months ago, and in moving back to Fort Monroe, brings with him a wealth of experience in the training, and testing, and administrative problems that go with this command.

These shifts occasioned others: Lt. Gen. Paul D. Adams moves from Commanding General, V Corps in Germany, to command of the Third U. S. Army at Atlanta, Ga. Maj. Gen. Frederic J. Brown replaces General Adams and Maj. Gen. Creighton W. Abrams, Jr., moves into General Brown's slot as Commanding General, 3d Armored Division in Germany.

ASSOCIATION OF THE U. S. ARMY

AIMS AND OBJECTIVES

THE ASSOCIATION OF THE U. S. ARMY shall be an organization wherein all who are in accord with its objectives may join in the exchange of ideas and information on military matters, and in fostering, supporting, and advocating the legitimate and proper role of the Army of the United States and of all its branches and components in providing for and assuring the Nation's military security.

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Charles A. H. Thomson, Pacific Palisades, Calif.
BGen. Robert E. Wood, Chicago, Ill.

LETTERS

(Continued from page 10)

pert fakery, such as the British use of a corpse with proper papers to mislead the Nazis about the invasion of Europe.

We came up with one psychological weapon and one actual weapon to use on Japan, either of which sounded like the ravings of marijuana smokers. Both actually were workable. We learned that the Japanese were superstitious, and one missionary suggested landing foxes doped with luminous paint, as a shining fox was the Nipponese equivalent of the double whammy, and plain foxes ranked with black cats. A test run on Central Park emptied the place in record time, with none of the folks run out believers in Japanese jinxes.

The other was the magnificently loony Project X-Ray, where bats with small incendiary bombs were to have been used against Japan. The accidental test of some of those that burnt down part of an airbase was said to have been the cause of dropping the project, in spite of proved efficiency. Perhaps the officer who thought one of our new incendiaries didn't look like a bomb also evaluated X-Ray. The use of such critters in Korea would have been quite a show against the well camouflaged Reds. We might have found out a lot of new positions.

Our evaluators of unconventional war should not forget the German ordnance officer who worked up the *Krummerlauf* attachment which shot around corners to the range of 100 yards. Other Germans said he was full of ideas and the *Krummerlauf* was the first one that had worked. A test showed it was very useful in street fighting and could have made our advance through German towns very costly. A man who has wild ideas may come up with one good notion in his lifetime.

During the early part of the Korean fuss a national magazine carried a story by a KMAG officer concerning one Captain Han Kil Su, ROKA, who impersonated a number of Reds and fought or bamboozled them out of one T34 and a lot of amazed troopers. He well knew they were awed by Soviet-trained higher-ups and he went around acting overbearing and giving authentic-sounding orders. Result: chaos, confusion, and what have you.

The Germans used such ruses here and there, but it takes folks with a good fiendish sense of humor to bring it off. I think we can do a bit of it.

CWO JOHN P. CONLON
Newark, Ohio

TODAY'S ARMY MUST BE...

STRONG...

... ONE FOR ALL

MODERN...

MOBILE...

What AUSA Is Fighting For

STRONG . . . Today's Army must be strong and unified to meet any threat to the security and peace of our Nation. The Active Army, Army Reserve and National Guard must work together as one team to insure that the United States is prepared.

MODERN . . . Our Army must have the very latest in equipment which our country can provide and to an extent which will assure our Nation a fighting force, properly armed and equipped for any type of warfare.

MOBILE . . . A tough and modern Army is only as effective as its ability to get to the scene of conflict without delay. That's why the Army must be provided with sufficient aircraft to carry out its vital mission.

These are some of the objectives which the **ASSOCIATION OF THE UNITED STATES ARMY** is fighting for. YOU can help support these vital aims and objectives by joining AUSA NOW and adding your voice. Write today for further details and membership application blank. Your membership includes a year's subscription to **ARMY** magazine.

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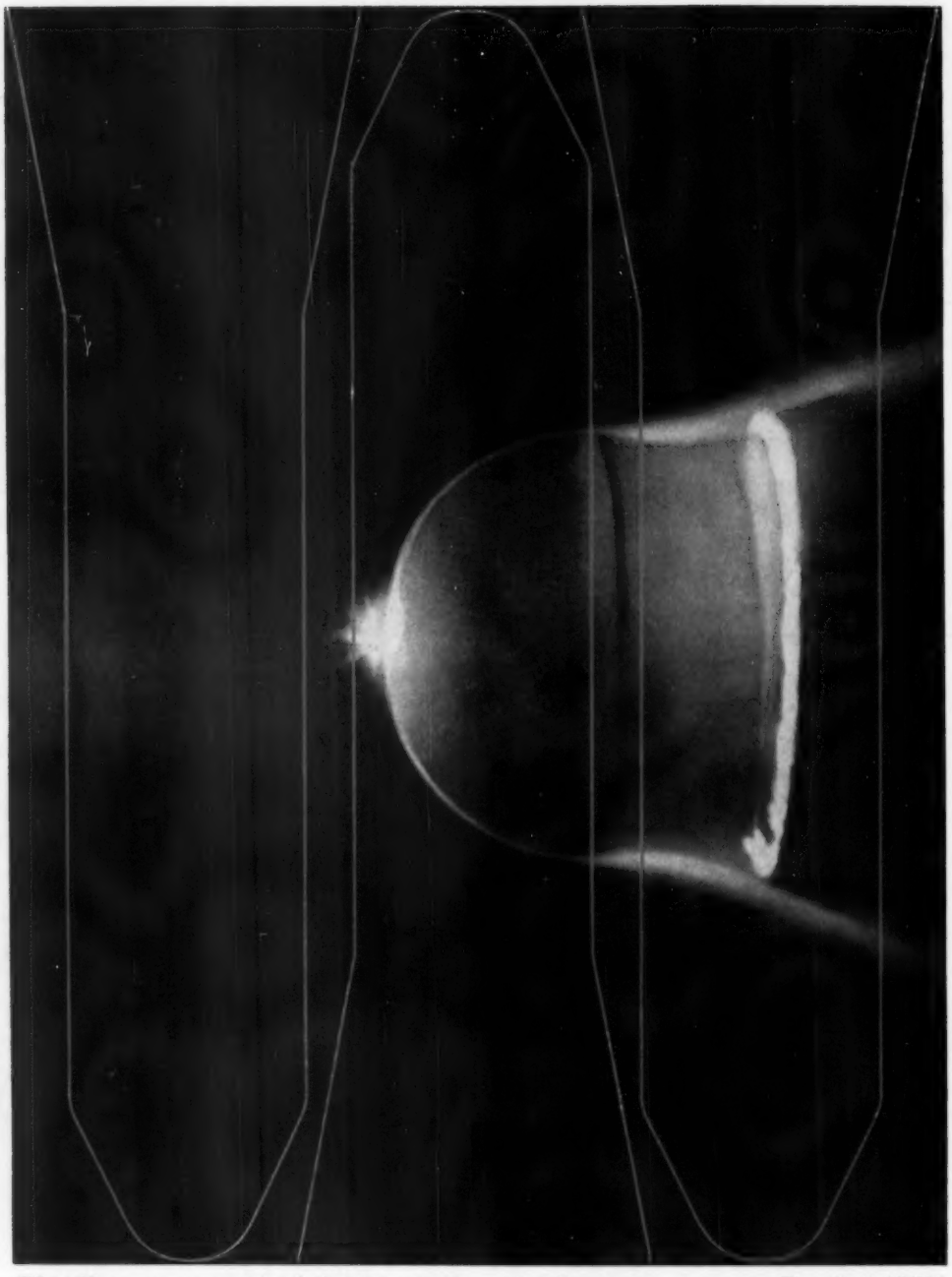

Blasting new materials to make missile nose cones. The first ICBM nose cone ever to be recovered after flight was protected by a new, high-temperature material. Its name: Avcoite. Its construction: specially reinforced ceramic. Avcoite was the first of a family of new heat-shielding materials. They were developed for re-entering nose cones and satellites by Avco's Research and Advanced Development Division. Newest addition to this materials family is Avcoat, a plastic heat-shield here ablating smoothly in a hydrogen-oxygen jet simulating satellite re-entry temperatures.

Avco

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